CAVE·MOUND AND LAKE DWELLERS

HOLBROOK

HEATH SUPPLEMENTARY READERS

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HEATH SUPPLEMENTARY READERS

CAVE, MOUND, AND LAKE DWELLERS
AND OTHER PRIMITIVE PEOPLE

By FLORENCE HOLBROOK

They say
The solid earth whereon we tread
In tracts of fluent heat began
And grew to seeming random forms,
The seeming prey of cyclic storms,
Till at last arose the man.
—TENNYSON

D. C. HEATH AND COMPANY
BOSTON NEW YORK CHICAGO ATLANTA
DALLAS SAN FRANCISCO LONDON

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Printed in U. S. A.

PREFACE

This little book has been written with a desire to give children some knowledge of the lives of primitive men — of their homes, their struggles with circumstances, and their slow growth toward better things.

These primitive peoples were our ancestors, who succeeded in overcoming obstacles and in bending nature to their will. Their virtues of courage, endurance, patience, application, and hope, while constantly struggling against adverse conditions, must awaken our appreciation and pride, together with a desire to be brave and strong ourselves.

That this brief recital of what we know of their life and progress, told simply for the young student, will give him a broader outlook upon the history of the race and greater admiration for the magnificent achievements of the past, together with an earnest purpose to help in the slow but continuous upward movement of the world, is the hope of the author.

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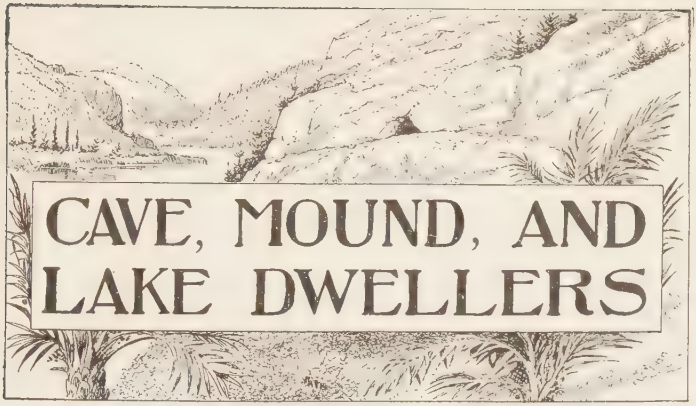


CAVE, MOUND, AND LAKE DWELLERS

CHAPTER I

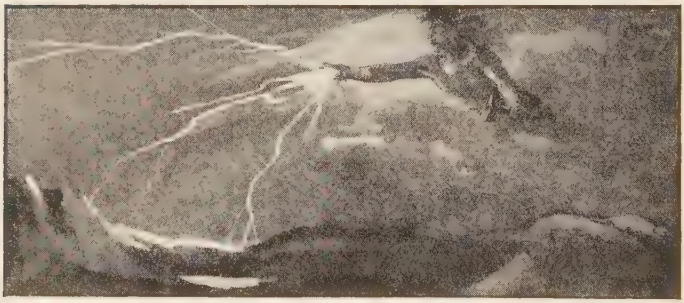
NATURE'S STORY

All children like to hear stories of the fairies who live in the flower cups and dance in the moonlight. Their bright eyes grow big with wonder when the story is told of the great giant, whose stride is a mile, and whose huge hand hurls heavy rocks far out into the sea.

But no story of fairy or giant is half so wonderful as the true story Mother Nature tells us in her book of rock and hillside. There are wise men who can read the pages of Nature's book as easily as you are reading this. These wise men were children once and the time will come when you also can learn to know the marvelous story that this old earth has to tell.

But thousands of years passed before men began really to study the book of Nature and there is

much to learn yet. In olden times men had many fancies about the size and shape of the earth, about the sky and stars, about the movements of the planets, and the power of the winds. They did not know that the earth was round like a ball but thought it was flat like a plate, and that the ocean was a river flowing around the land. They could



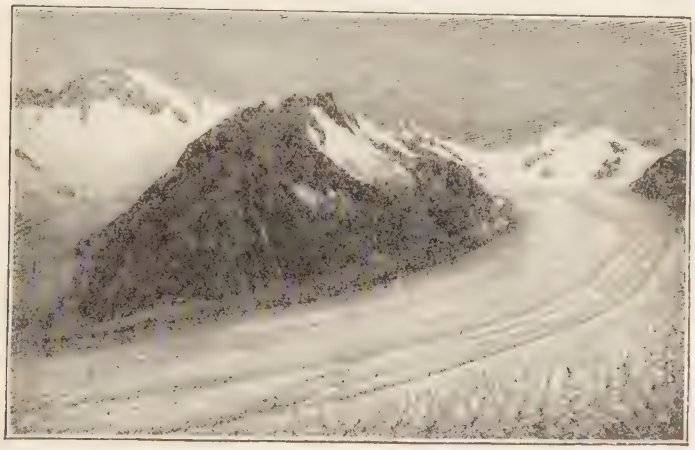
The God Thor hurling the Lightning

not understand that the movements of the earth made day and night and the circle of the year.

They believed that the sun rose in the east every morning and that the earth was fixed in its place and did not move. The lightning, they said, came from the hand of some angry god, and the forests, hills, lakes, rivers, and ocean were the homes of witches and giants and all kinds of strange beings.

Now men have learned much about the earth and sun and stars. They know the cause of the lightning and have made it their servant to carry

messages all over the earth. They have sought the aid of the sun and by its help we have photographs of people and places. Steam is harnessed to car and boat and carries us rapidly over land and sea. We now fly through the air as birds do.



A Modern Glacier

People who love Nature and study from her book tell us that there was a time long ages ago when no man lived upon the earth. The earth passed through many changes before man came. Huge glaciers — rivers of ice — ground their way slowly over the rocks below. They melted and passed away. Lakes were once where great valleys now are and in some places now under the ocean tall forests grew. Earthquakes shook forest and rock, and caused mountains to lift their heads above the level of the sea.

Ages after ages passed, Forests grew, decayed,

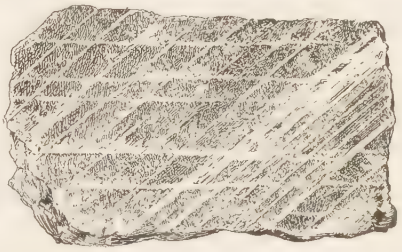
fell, and were covered with earth, and slowly pressed together until they became great beds of coal, which we use in many ways for our comfort. Strange animals, larger than any we have to-day,

Strange Animals of Prehistoric Times

some like great serpents with wings and others that seem equally monstrous to us, tramped over the land and swam the seas. Trees, plants, birds, and beasts were very different from those that we see to-day.

On the rocks we can still trace the scratches made

by the great glaciers as they passed along; and we know that just such marks are made by glaciers to-day. Then we find in various places fossils, that is, pieces of plants and animals that during various changes of the earth have been turned into stone and so preserved. By studying these we find out what the plants and animals of long ago were like.



Rock showing Scratches made by Glaciers
From United States Geological Survey

Though the story of Nature as told in the book of the earth is stranger than any fairy tale, yet the story of man's progress upon the earth is even more wonderful. When we think of the fears and difficulties that he has had to overcome, the floods and tempests, the wild beasts, the constant fight for life that he has had to endure, we are amazed. When we remember how men lived in the earliest times of which we know anything, and observe how far they have advanced up to the present time, we can scarcely believe that so

Fossil Plant Life in Section of Coal
as seen through a Microscope

much could have been accomplished even in thousands of years.

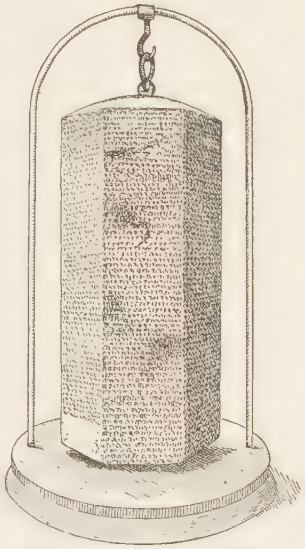
If we wish to learn what men had done before the times of our fathers, we can read their histories in books. Before men learned to print and make books, histories were written by hand. These records were called *manuscripts* (written by hand); and we still have many beautiful manuscripts of parchment and paper. Before parchment and paper were used men wrote on clay and brick and stone, using sharp-pointed wood or stone for pens.

Runic Letters carved on Stone

But men lived on the earth thousands and thousands of years before they knew how to write in any way, — even before they had any wish to write. How, then, can we learn anything of their history? Where did they live? What were their homes like? How did they live? How did they look?

Chaldean Clay Tablet more than 5000 Years Old

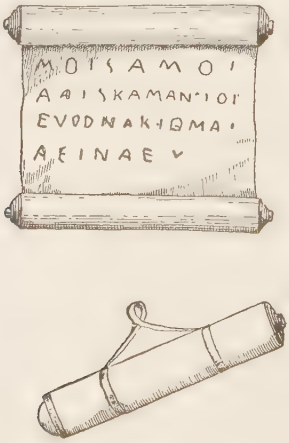
Some of these questions can be answered in two ways. One way is by finding their homes and studying the objects that they made or used and left behind them. Millions of these objects have been found, such as pots and jars, axes and arrow-heads, fish-hooks, needles, cooking utensils, and the bones of men and animals. They are found all over the earth, in the mud of the lakes, where the Lake Dwellers lived, in caves and cliffs where men made their homes, and in mounds constructed by the mound-builders. Many of these things have been placed in the great museums where we may all see them.



Clay Cylinder from Nineveh. On it Sennacherib describes his Victory over Hezekiah

The people who lived before history was written are called *prehistoric*, a word that means *before history* was written. There are also some tribes living now in certain parts of the world who are called savage and barbarous because they have learned but little compared with what the wisest races know. They are still living somewhat as the prehistoric people lived; and the study of their habits is the second way in which we can learn something about old ways of living.

In these two ways we come to understand what a long fight against the forces of nature men have had from the early days of the world. We see how slowly and painfully they have learned to make all the things that we take as a matter of course to-day, such things as fire, cooked food, clothing, houses, furniture, and books. We see, too, the great difference between men and animals. Animals go on doing things in the same way, but men are always working and learning to understand the world more and more, and so to live more wisely and more happily.

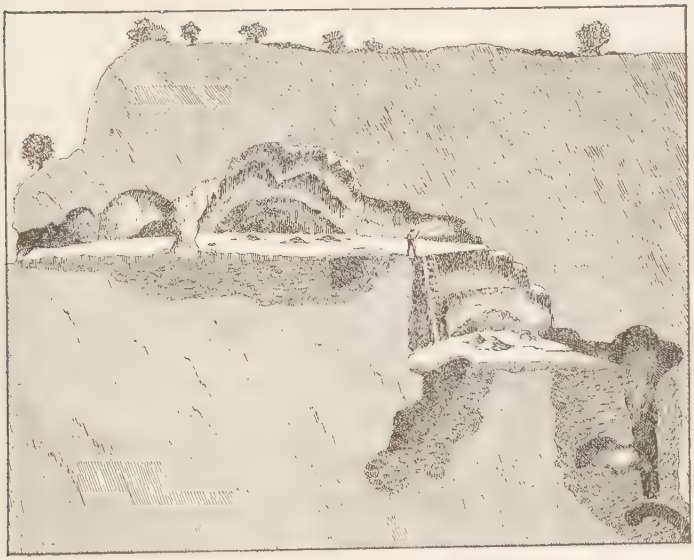


An Old Manuscript Book

CHAPTER II

THE OLD STONE AGE

THERE was a time, so long ago that we have no record of it, when men did not know what fire was.



A Cave Dwelling of the Stone Age

It is not easy to imagine what the world would be like without fire. Men must have lived then as the wild beasts do now. They could not cook

their food, and they had not the protection that fire gives against animals that are fierce.

We cannot tell anything about this time when men did not know and use fire. The earliest people that we know about could use this great power. There is a cave in France, near the city of Mentone, where the roof is still black with smoke from fire that was built, wise men tell us, perhaps forty thousand years ago. These very ancient people

Picture of Reindeer drawn on a Slatestone by a Cave Dweller

lived in caves or cliffs. They did not know anything about the metals — gold, silver, bronze, or iron. They worked in stone, and all the tools and weapons they left in their homes were made of stone. For this reason we say that they lived in the Stone Age.

At the time when people lived in caves there were many huge and dangerous animals which men had to fight to save their own lives. There were reindeer, bears, and hyenas, all much larger than the

kinds now living. Then the cave bear and the saber-toothed tiger, animals that have all died long since, were the fiercest creatures men had to conquer.

We know that these great beasts lived at the time when men dwelt in caves, because pictures of a mammoth and of other ancient animals, scratched on bone, have been found among the utensils left

Cave Bear

by the cave-dwellers; and the men who made these pictures must have seen the animals. In the same places are usually found rough, unpolished tools and weapons, such as spear-heads and arrow-heads, hammers, scrapers, knife blades, and hatchets. These rough-shaped spear-heads and the bones of great animals have also been found together in beds of gravel, clay, and sand. It is supposed that

these beds of earth and rock were heaped up by the changing currents of rivers, and they are therefore called river drift.

Hammer Stone

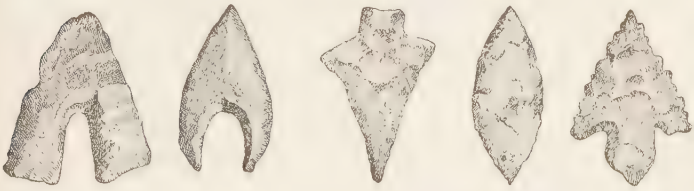
It may be that the people whose weapons are found in the river drift lived before the cave men, because more mammoth bones are found in the drifts than in the caves. In the caves there are more reindeer bones than are found in the drifts; and we know that the mammoth lived before the reindeer. We must remember that both the drift and the cave people lived in the most ancient time that we know anything about, which we call the Old Stone Age. These people were scattered over many places of Europe, Asia, Africa, and America.

The bones and the stone weapons, then, are all that is left of the Old Stone Age. If men made pottery of clay they did not know how to bake it in the fire, and no pottery that has been found, so far as we know, belongs to that age. How long the people lived in the Old Stone Age no one knows, but it lasted certainly for thousands of years.

CHAPTER III

THE NEW STONE AGE

Although writers speak of the Old Stone Age, the New Stone Age, the Age of Bronze, and the Age of Iron, we do not know when each began and ended. There is no time when we can say, "Here is the end of the Old Stone Age, and the beginning of the New Stone Age." Some writers have thought



Arrow-Heads of the Stone Age

that a long time passed between them; but it is now believed that the cave men passed slowly and gradually out of the earlier into the later Stone Age as men lived and learned constantly how to make and to do more things. One age probably developed into the next as the colors of the rainbow pass into one another. It is impossible to tell exactly where one color merges into the next.

The men of the oldest time that we know any-

thing about had only rough stone axes which they used either in the hand or fastened to handles by means of rawhide thongs. Afterward, in the later Stone Age, men learned to polish their flint and stone weapons and to sharpen the edges by means of grinding stones. They also learned to bore holes in the axes and to drive the handles through them, thus making a stronger and safer weapon. But this change came to pass slowly. While the rough,

An Ax with the Handle tied on with Thongs

chipped weapons of the older age were being used, perhaps some one, here and there, learned how to polish and sharpen his battle-ax; and so gradually the polished weapons came to be made and used everywhere.

People who used candles a hundred years ago did not have gas or electric light; and we still have candles and some people use them, although we use gas and electricity. In the same way, the men who lived in the Old Stone Age for thousands of years did not have the polished weapons; and the ruder axes continued to be made by some people

long after others had begun to use the polished weapons.

The same caves that were used as a home, a refuge, or a burial-place by the people of the Old Stone Age were used, centuries later, by the people of the New Stone Age who had polished weapons. Thousands of polished and sharpened hatchets, axes, skin-scrapers, and arrow-heads are found near the surface of these caves while the rough and dull weapons of the earlier men are found buried in the soil far below.

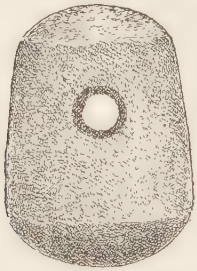
Flint Spades and a Hoe

The enormous wild beasts of the Old Stone Age gradually disappeared; and numerous smaller animals, not so fierce, some of which have survived until to-day, took their places on the earth; and these in turn are disappearing as men have become more numerous and more civilized.

The weapon that was chiefly used in the Stone Age is called the *celt*. It varies in size from one inch to eight inches in length and from a quarter of an ounce to a pound and a half in weight. It is

Stone Celt with Wooden Handle

wedge-shaped and sharpened on one end. Some of these have been found with an edge sharp enough to cut a lead-pencil. They were used for many purposes. To the boy of that time the celt was his knife. Fastened in the end of a pole, it would serve as a lance point, while set in a club it could be used as an ax or weapon of war. Very many celts have been found set in a piece of stag's horn and evidently ready to be fitted to a handle of wood, but the wooden handles have disappeared.

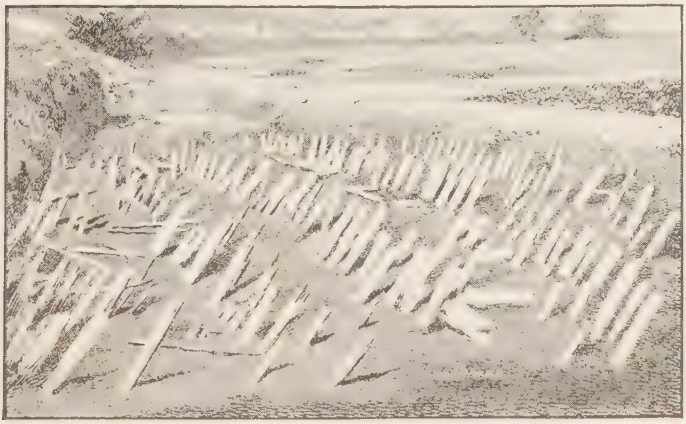


Hammer Stone with
Hole for Handle

CHAPTER IV

THE LAKE DWELLERS

One of the most interesting chapters in the history of the ancient people is the story of the Lake Dwellers. There are some families now that live



Pile Foundations of Houses of Lake Dwellers exposed by excavations in the bed of an old lake in Italy

in boats, and most of us like to take a short trip on the water. But the Lake Dwellers built their houses in the water and lived there all the year round.

The ruins of hundreds of such houses have been found in the lakes of Switzerland and elsewhere. It was not until 1854 that men dug into the beds of

the lakes to look for relics of the men who lived long ago. And this is the way they came to do it. The water in Lake Zurich had fallen so low that islands were shown which before had been covered by the water, and on these were found many piles and a great number of stag-horns and implements of different kinds.

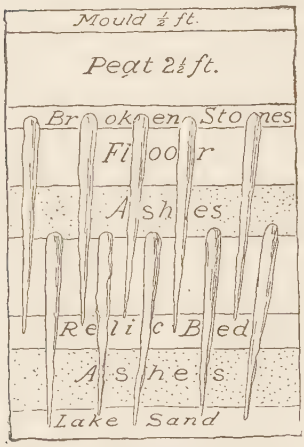


Diagram showing Relic Bed, and site of two Lake Dwellings each of which was destroyed by fire

The piles were split trunks of trees — beech, birch, oak, and fir — and were from four to six inches thick. They had been sharpened at the lower end by fire or by stone celts. These piles had been driven into the bed of the lake, extending from the shore out toward the deep water. Most of the relics were found on the lake side of the piles, showing that the houses of the Lake Dwellers were built away from the shore.

These piles were driven into the bed of the lake in two parallel rows and close together; trunks of trees were forced down between them and this roadway was covered with a matting of twigs woven together like basket-work.

The houses of the Lake Dwellers were oval, circular, or square, from ten to twenty-seven feet

wide. The walls were formed of perpendicular posts fastened together by branches woven in and out. These walls were probably lined with clay.

Reconstructed Village of Lake Dwellers.

The roofs of the houses were made of bark, thatch, reed, fern, or moss. Each hut had one door and a fireplace.

In the floor of each house was a trap-door. Through this, refuse was thrown into the water below, which served as a garbage box for the people. We are not sorry that they kept house in this way, however, for we can read their history in the bones and broken pottery and other things that have been preserved at the bottom of the lake.

The Lake Dwellers, as far as we know, had very

little furniture. They may have used trunks of trees for chairs and tables; and their beds were perhaps made of moss and skins.

Our wise men tell us that most of the lake villages were built and occupied by the people of the New Stone Age. Most of the weapons and utensils are of finely polished stones and finished in the manner of that time.

Thousands of relics are found in the boggy earth that forms in the bed of these Swiss lakes, and the peat has helped to preserve them. In one place it can be shown by the condition of the relics that people built in the same place three different times, and that the buildings were twice destroyed by fire. The relics of these villages are found in three layers or relic beds lying one above another, with layers of ashes between.

From these peat beds we can tell what trees, plants, and animals lived at the time of the Lake Dwellers, many thousands of years ago. Hundreds of bones are found, showing that man had tamed the dog, ox, sheep, pig, goat, and perhaps the horse. With the help of the dog he hunted the bison, the wild boar, the cave bear, and the deer; with the help of the other animals he became a farmer and tilled the fields. This is shown by the nuts and cereals of many kinds, apples, peas, wheat, and barley — which are still preserved. Millet bread and the stone with which the flour was ground have also been discovered.

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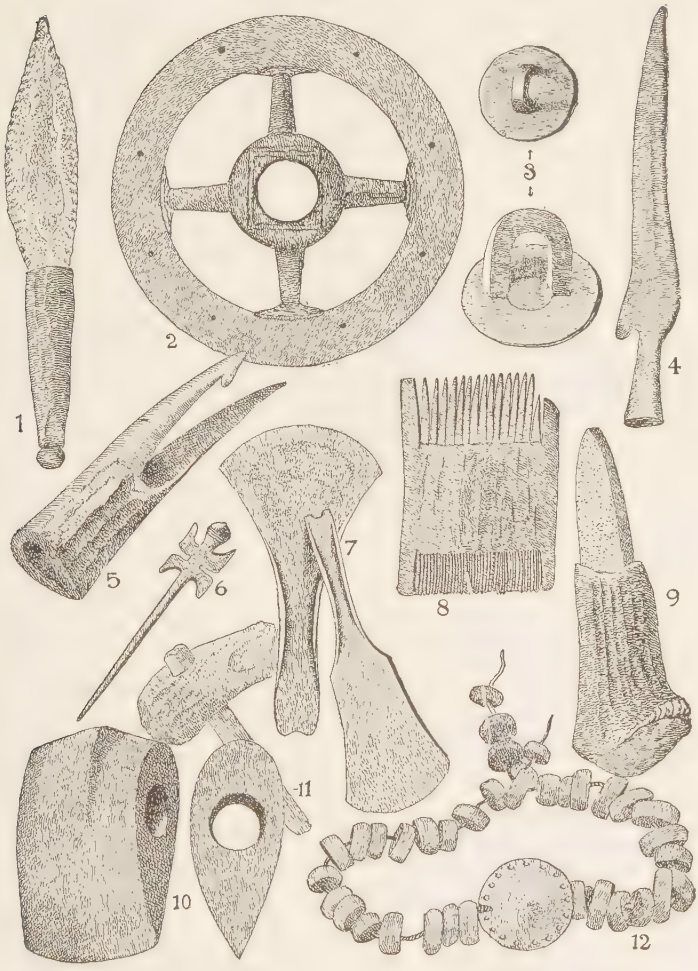


Relics of the Swiss Lake Dwellers.

1. Flint dagger in wooden handle. 2. Wheel. 3. Horn buttons. 4. Knife. 5. Horn spear. 6 Bone pin. 7. Forms of flat bronze celts. 8. Wooden comb. 9. Stone chisel in horn handle. 10. Stone axes. 11. Horn hammer-axe, with portion of the wooden handle still remaining. 12. Necklace of marble beads, after Dr. Much.

It seems strange that large numbers of people would build villages and live for hundreds of years in houses raised on piles in the water. But they did this for protection against wild animals and

Earthenware Jars and a Wooden Dish of the Lake Dwellers

hostile tribes of men. Dwellings on piles could be easily kept safe from both.

These people raised flax and knew how to spin and weave, making thread, string, rope, and cloth. They used linen for part of their clothing and they knew how to prepare the skins of animals for their use. Pieces of leather have been found and a shoe last, showing that they made leather coverings for their feet.

Spear Head

Besides their huts, the Lake Dwellers made many small things of wood, such as kitchen utensils, which they worked into shape with their stone axes. They made canoes of large trunks of trees, hollowed either

by the stone axes or by the use of fire. They had clay dishes of many shapes. Some of their pots were large and strong enough to stand fire so that they could be used for cooking. This pottery is all broken, but enough remains to show that some of it was ornamented.

The bones and horns of animals were used to make daggers, needles, hairpins, fish-hooks, and many other useful things. It is thought that the antlers of deer were used in turning up the ground before sowing seed. Stone axes, javelins, and clubs were the weapons used by the Lake Dwellers in hunting wild animals and in protecting themselves from their foes. Not only did the Lake Dwellers live through the later Stone Age but they knew the use of metals as well. All the weapons made of polished stone we find copied in bronze; so we know that the dwellings in the lakes were used by people who could work in this metal. There is no definite boundary fixed for the end of the Bronze Age among the Lake Dwellers, but we know that all record of them had passed away before the Romans conquered the people who lived in Switzerland in the first century before the Christian era.

Piercing Implements of Bone

Wooden Club, Bone Socket, with Stone Celt

Many people living to-day in New Guinea and South America have their homes out in the water; and from studying these and their way of living we can better imagine how the Lake Dwellers lived before history began to be written.

A Modern Pile-Dwelling Village in New Guinea

CHAPTER V

KITCHEN MIDDENS. MOUND BUILDERS

Scattered over the earth in various places are mounds which, when they are opened, are found to be full of shells and bones and other relics of early men or of their homes. By studying these we can find out, in another way, something of the early history of men on the earth. Along coast lines and river banks are found these great heaps of earth, sometimes as many as ten thousand feet long by three hundred feet wide. For thousands of years men thought that they were natural and so did not try to explain them or find out what was in them.

Lance Heads found in Kitchen Middens

Not very many years ago some Danish men of science studied these mounds, of which there are thousands in Denmark, and named them *kitchen middens;* and wherever similar mounds are found, in America, Australia, and Africa, they are called by this name.

These kitchen middens are heaps of kitchen refuse, that is, remains of food and cooking utensils lying where they were thrown thousands of years ago. Oyster shells, and myriads of other shells, and the bones of animals, birds, and fish are found in them.

A Capercaillie

All the bones that contained marrow are found split open in a way that no animal can do; so they must have been broken by man in order to get at the marrow for food.

Among the bones of animals found in these refuse heaps, a learned man noticed that certain long bones had been gnawed in a peculiar manner. He believed that the dogs of that time had gnawed them, so he thought of a way to prove it. He gave some long bones to his own dogs and found that they gnawed them until they looked like the bones of the kitchen middens. So it is clear that dogs lived with men at that time and were given the bones of the animals that they hunted, for their share of the feast.

Implements of bone, wood, and stone are found in the kitchen middens. Some bones of fish that lived only in the deep sea are found also in the refuse heaps, proving that the men of that time dared to go far from land in their search for food.

It is believed that the kitchen middens are at least as old as the early part of the New Stone Age. The bones of the capercaillie, a bird that has not lived in Denmark since the disappearance of the

Kitchen Middeners and their Dwellings

great forests of fir, have been found in these refuse heaps. Fir forests covered Denmark thousands of years ago and the capercaillie fed upon the young, tender buds. Since we know that the forests of fir disappeared from Denmark during the New Stone Age, the finding of these bones in the refuse heaps is one proof that the men who made the kitchen middens belonged to that time.

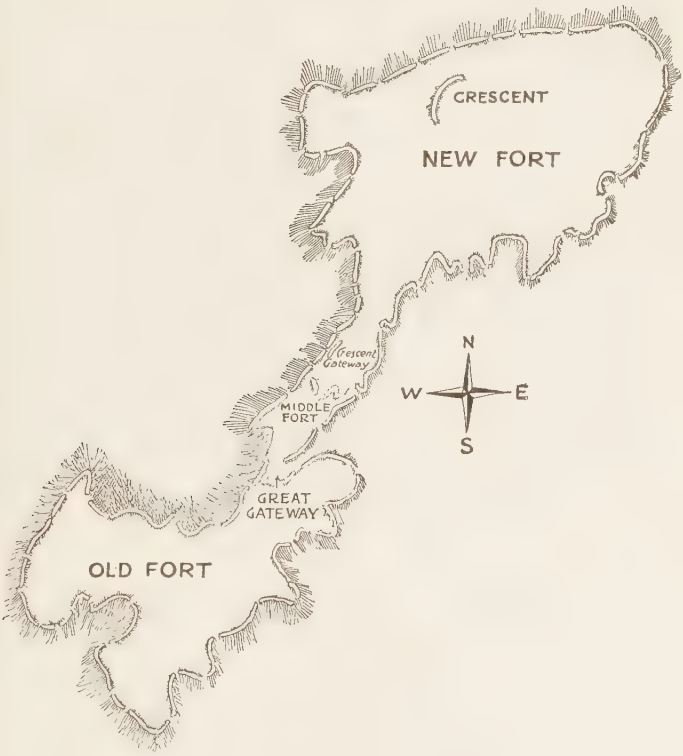
In a museum at Copenhagen in Denmark there may be seen three boats taken from the kitchen

middens. They are perhaps the oldest boats in existence, and they are hollowed from solid trees. We wonder how the men of those far-away times dared put out to sea in the hollow tree trunks without rudder or compass. One of these logs is cut straight off at both ends. Another log is rounded at one end and pointed at the other, and the third has a wide seat and locks for rowing.

In North America there are thousands of mounds made by man. They are found in the great Mississippi valley, and are of many sizes and shapes. Most of these mounds have been built along the river valleys. In the state of Ohio alone there are thirteen thousand, and near the mouth of the Illinois River about five hundred have been counted. The Mound Builders showed good judgment. They built their mounds where life was easiest and safest, for the soil along river banks is richest for cultivation, and the rivers themselves are the chief means of travel for primitive people, who have not learned to build roads across the country.

The mounds are of two general classes, enclosures and single mounds. The walls of the enclosures usually surround from one to fifty acres of land, but sometimes as many as two hundred acres. The walls are built of clay, sometimes mixed with stones, and are from three to thirty feet high. The enclosures are of different shapes, but generally form either a square or a circle.

These enclosures were evidently built for defense in war or some other danger, and they are very strong. One of the most famous is called Fort Ancient. It is built on a hill overlooking the Miami

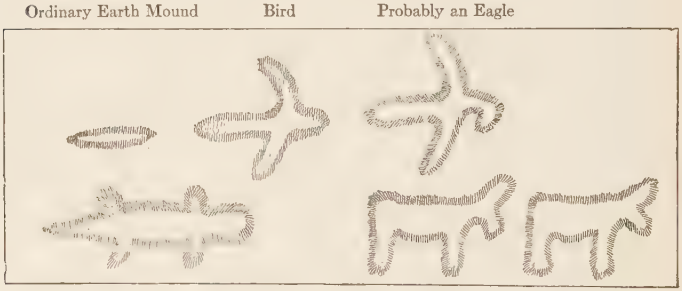


Map of Fort Ancient, Ohio

River in Ohio and has five miles of wall. The walls are of tough clay, and average twenty feet in height. There are seventy gateways in the embankment. Within the enclosure there are twenty-four reser-

voirs which, with the springs there, would furnish water for any number of persons who might be besieged. This great enclosure was overgrown with a primitive forest a few years ago, but this has been cleared away in order that the mound might be explored.

It is not known for what purposes the single mounds were erected; but it is believed they were



Effigy Mounds near Cassville, Wisconsin

used, severally, for forts, for temples, and for the homes of priests. In some of the mounds have been found skeletons and bones, and urns in which are human remains placed in rows one above the other, which prove that they were the burial-places of these unknown people. To build the largest of the mounds must have required the labor of a thousand men for months. Some are made of clay, although the soil all around them is gravel, so the clay must have been brought from a distance.

The most curious of the mounds are those made

to represent an animal, a bird, or a reptile. Most of these mounds are found in Wisconsin. Thousands of them have been counted in that state, representing man, the lizard, bear, fox, frog, bird, the cross,

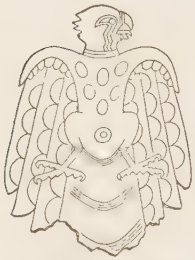
Great Serpent Mound, Ohio

crescent, war-club, and tobacco-pipe. The big Elephant Mound is one hundred and thirty-five feet long and sixty feet broad, and rises five feet above the level of the surrounding country.

Although very few animal mounds appear in Ohio, the Serpent Mound in that state is one of the most wonderful. It is built on a height of land above Brush Creek. The hill is long and narrow, and on the summit is this mound, the head near the point and the body winding back about seven hundred

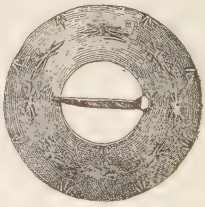
feet. The mouth is open and holds in its jaws an oval mound one hundred and sixty feet long, eighty feet wide, and four feet high. The serpent can be seen plainly, rising five feet above the level of the ground.

Spear-heads of flint, arrow-heads of quartz, flint knives, stone axes, hatchets of stone, rough and polished, are found in great numbers in these mounds. The pottery found is all made by hand, is of fine shapes, and decorated with lines and figures. The Mound Builders belonged to the Stone Age; but the mounds themselves were used by people who lived on through the Stone and Bronze ages.



Copper Plate with Bird from Mound in Illinois

The Mound Builders showed some knowledge of sculpture, having carved forms of men, animals, and many kinds of birds. Their clothing was in part the skins of wild beasts; but cloth has also been found in the mounds, spun and woven from some material similar to hemp.



Silver Brooch from Mound in Wisconsin

CHAPTER VI

MONUMENTS

We have read about the stone tools, the weapons, and the bones found in the caves and gravel heaps. We have learned something about the homes of

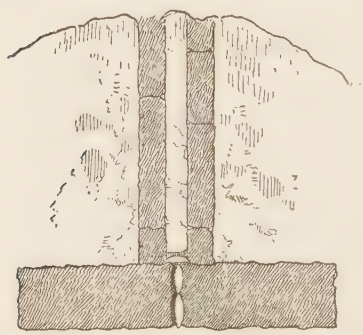
A Burial Mound of the Stone Age

the Lake Dwellers, and about the people who made the kitchen middens and the mounds of North America. There is still another way in which we can learn more about the people who lived before history began, and that is by looking at the tombs that they built.

At first men seem to have been buried in the caves

where they lived. Human bones have been found with weapons and vases so placed as to show that the house of the living had become the home of the dead.

But as soon as men began to live in houses that they built for themselves, they also erected tombs much like their own dwellings, many of which remain to-day, even where the houses of the living have vanished.



Section of the Interior of the Mound shown on the preceding page

Sometimes these tombs are like a one-roomed stone house covered with a great mound of earth. When these mounds are overgrown with trees and shrubs, they can scarcely be distinguished from natural hills; but when people think that they have been made by hand, they dig down to the center, and there often find the little stone room, with bones in it, and vases, ornaments, and weapons.

Sometimes instead of bones, they find only ashes in an urn or vase; and then they know that the body was burned before it was buried. This happened very often during the New Stone Age, and has been done from time to time ever since.

In the tomb, besides the bones or ashes, are found

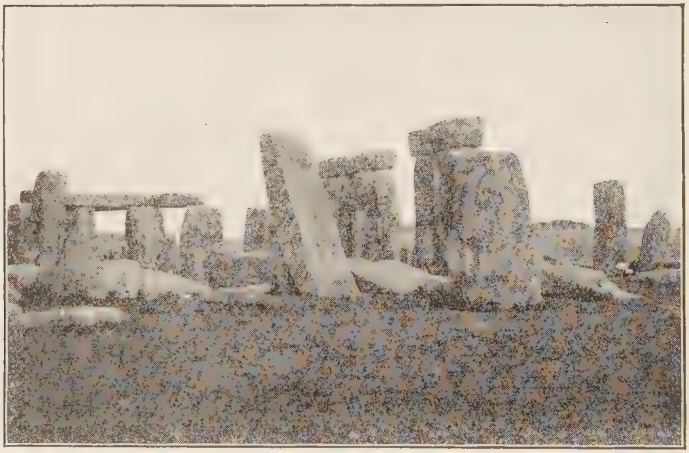
the dress, ornaments, weapons, and jars of food that it was supposed the person buried would need in his journey to the next world. Sometimes dogs and horses were killed at the funeral because it was thought that their master might wish to have them; and their bones were buried with his.

While these tombs are often covered with great

Carnac, in France

heaps of earth, such as the mounds of our own country, about which we have already learned, some of them were left exposed to the air. These consist of several upright stones covered by another, making a table-shaped tomb. These stones are sometimes so enormous that we wonder how they could ever have been set up without machinery. At Carnac, in France, there are thousands of these placed in eleven rows. But, unfortunately, the peasants who live in the neighborhood break them up and carry them away for building and other purposes.

At Stonehenge, in the middle of Salisbury Plain, in the south of England, many huge stones are arranged in a great circle; but it is not certain for what purpose they were used. It may be that ancient chieftains are buried near, and that the circle itself was used as a place of worship.



Stonehenge, in England

Within a radius of three miles there are nearly 300 burial mounds of the same period

These great tombs found in many parts of the world prove that men living far apart, and at different times, have passed through the same growth of ideas. And the tombs themselves, and the relics within them, tell us a great deal about the way that people lived and the things th: they believed.

CHAPTER VII

THE ANIMALS OF THE STONE AGE

It is interesting to know something more about the animals that lived during the Stone Age. The mammoth was an elephant much larger than any living now. No one can tell how many thousands

Sketch of Mammoth on a Tusk found in a Cave in France

of years ago the last mammoth lived. Remains of this great animal are found all over Europe as far south as Italy. In North America also many bones of the mammoth are found; but Siberia seems to have been its favorite home.

About one hundred years ago a hunter in Siberia found a mammoth entirely enclosed in the ice. He saw the ivory tusks and waited until the ice melted

enough to permit him to cut them off. The tusks were valuable for their ivory, and he sold them to a merchant in the neighboring village. For some time after this mammoth had been found, the dogs and wild beasts of the neighborhood fed upon the carcass.

At length a man who knew the value of this animal as a lesson in the earth's history had the skeleton dug up and taken to a museum in St. Petersburg where it can be seen and studied to-day. The hide was so heavy that ten men with great difficulty carried it to the ship. The skeleton measures sixteen feet and four inches in length and stands nine feet and four inches high. The tusks are much larger, heavier, and more curved than the tusks of the elephant of to-day. (See Frontispiece.)

Cave Bear drawn on a Pebble found in a Cave in France

The climate must have been colder in Siberia when the mammoth lived there than it is at the present time. While our elephant lives in warm countries and has no hair or wool, the mammoth was covered with very thick reddish wool and long black hair. Although thousands of mammoth tusks have already been found and sold as fossil ivory, more are discovered all the time, showing that

immense numbers of these huge beasts roamed through the forests of Siberia in the long forgotten ages. The food of the mammoth consisted of the leaves and twigs of the spruce and fir.

At the same time with the mammoth there lived

A Rhinoceros of the Stone Age

a huge rhinoceros. One of these has been found embedded in the ice and snow of Siberia; and its thick wool and hair have been preserved. But the bones of others are found in many places with the bones of the mammoth, showing that they lived at the same time and roamed together over Siberia and northern Europe.

The bones of a huge bear, larger than the great grizzly of America that lived also at this time, have been found in great numbers. It is called the cave bear because its remains are so often

found in the caves where men of the Stone Age lived.

The bones of other bears, lions, and hyenas have also been found in the caves of the Stone Age. These bones all prove that the animals of that time were much larger than the animals of the same name now living.

Two very curious animals that lived in the Stone

Aurochs

Age were the urus and the aurochs. The urus, a large animal somewhat resembling an ox, was living in Europe two thousand years ago, but has since died out. It was very strong and very swift and therefore hard to kill or capture.

The aurochs looks much like the American bison. It lived before the time of the mammoth and the woolly rhinoceros, and strange to think of, it was hunted in Prussia as late as 1775. Even now there is a herd of aurochs in the forests of Russia, pro-

tected and guarded from the hunters by order of the government.

Many smaller animals, such as the horse, dog, hog, fox, and deer, lived during the Stone and Bronze Ages and have survived until our own time. The bones of these animals, however, are so small that

Irish Deer

few have been preserved. It is only the large bones of the large animals that have remained for our study; but we know that many more kinds of animals lived in the early ages in Europe than are living to-day.

One of the most beautiful animals of that earliest time was the Irish deer. It lived in Germany, France, Italy, and England, but especially in

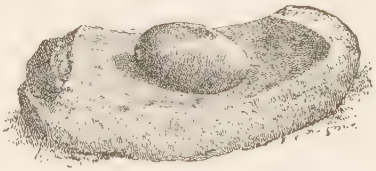
Ireland. This deer was about ten feet high and its antlers were magnificent. They often measured eleven feet between the tips. It is believed that this beautiful creature lived before and during the Stone Age, but passed entirely away before historical times.

Horses Carved on Reindeer Horn by Cave Dwellers

CHAPTER VIII

FOOD GETTING

PRIMITIVE man never knew from day to day where he would get his dinner. People then lived in groups, not in families as men do now. The men hunted the wild animals and brought them to the women, who made them ready to eat. In the earliest times the flesh was eaten without being cooked. We know that sometimes, when no animal could be found and they were starving, the men would kill and eat the weakest in the group. There are still a few savages in some parts of the world who eat their enemies or even members of their own tribe. They are called cannibals.

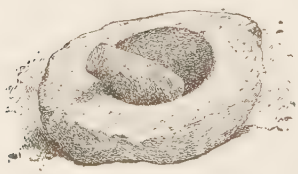


Ancient Grinding Stones

After men learned how to make fire they cooked the meat and liked it better than uncooked. Besides the game that the men caught they ate rice, berries, and nuts. The women took their babies with them and went fishing or gathering wild rice. They learned what roots and berries were good for food. They found honey and carried it to their homes. Acorns

and other nuts were gathered and made good food.

The ancient American Indians, we know, ate what we call Indian corn, and they had sweet potatoes and squashes. The drying of squashes and the grinding of grain were always woman's work, while man did the hunting. Corn was not at first ground or even parched, for man lived long upon the earth before he learned how to prepare his food. When grain was made into flour, it was done in the same way that it is ground now, only we have great mills with which to turn the big stones around when the grain is between them. In the Stone Age they put some grain into a hollow stone. Then they turned another stone which fitted into the hollow round and round until the grain was all broken into fine pieces. They caught the flour as it came to the edge of the stone in coarse mats made of rushes or grasses. Millers to-day collect the flour in fine cloth.



Used in the Stone Age for Pounding Grain

Hunting in the Stone Age was very hard work. The only weapons were made of stone and the animals were very fierce. If the blow was not strong enough, or the spear missed its aim, the beast would kill the hunter. Many times the wild creatures would get away and the women and children would be hungry.

One way of hunting ducks shows how men used their wits in those early days. They would let big gourds float near the shores of the lake so that wild ducks would become used to seeing them and not be afraid. When the time for hunting came, the men would put hollow gourds over their heads

Pueblo Indians Grinding Corn in the Primitive Way

and swim near the ducks. Then they would quickly drag the birds under water and hold them until they were drowned.

Water is as necessary for man as is food. So the men of all times see to the water supply. The men of the Stone Age lived near rivers or lakes, and sometimes had their homes on the water, as the Lake Dwellers had. Great wells have been found which

were dug by primitive men, and water was sometimes brought from great distances by long troughs.

Everywhere among the relics left by the men of the Stone Age are found water jugs. These are not always beautiful, but sometimes they are of graceful shapes and made to fit a woman's head. Among the primitive or savage people the men rarely carried water. Children were busy as water carriers, no doubt. We know that the story of Jack and Jill is very old.

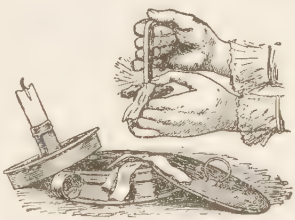
A Water Vessel of the Mound Builders
From a Mound in Missouri

CHAPTER IX

FIRE MAKING

To-day man lives in a world of electric light, steam heat, hard-coal furnaces, gas for cooking and lighting, and all kinds of stoves and grates. Can we think of a world without any heat except the sun's rays, or without any light except that given by the sun, the moon, and the stars?

When man first saw fire coming from the seams of the earth's crust or from a volcano, what did he think? The old Greeks believed that volcanoes were the workshops of the mighty god of fire. Fire had always been a mystery — wonderful, beautiful, helpful, and terrible! To the earliest men it must have been as strange as the mystery of the sun, the moon, and the stars. They saw the smoke rising toward the sky and they believed that the fire came from heaven and was returning to its home.

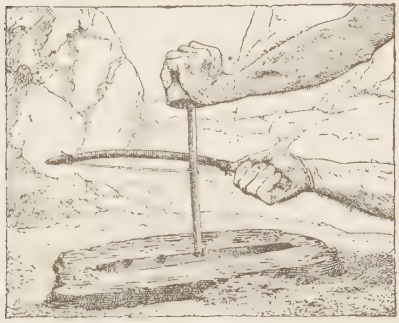


Tinder Box, Flint, and Steel used for Making Fire less than a Hundred Years Ago

Everything that moved itself must be alive, they thought. The wind moving in the trees and blowing things about, and the water running down the hill-

side must be alive, or how could they move? So they thought fire which blazed with warmth and light must be a god. Therefore they worshiped it. Fire kept them warm, cooked their food, saved them from the wild beasts, and, as they believed, from ghosts.

After primitive men had learned what fire would do for them they tried to guard it. It was very hard to make a fire in primitive times. They had no matches, for these have been in use only a few years. So they learned to make fire in two ways, first, perhaps, by friction and afterward by percussion.



Making Fire with a Bow-Drill

Probably the oldest means of getting a fire was by friction. Primitive man also used two ways of doing this. He had two fire-sticks. One stick had a groove in it, and the second stick fitted into the groove. By rubbing these fire-sticks together hard enough and long enough both heat and fire will come. But isn't this a slow way of getting a fire? Our matches are made with ends that will light by the gentlest friction, but the principle is the same as that discovered by the cave men.

An easier way of making a fire by friction was by the bow-drill. A stick, with its sharp point resting in a round hole made in a stationary piece of wood, was held in place by a cross piece. The stick was very rapidly whirled, first in one direction and then in the opposite direction, until a spark came at the point of friction and was caught among dry leaves.

Primitive Man making Fire by Friction

The museums have made collections of fire-sticks and bow-drills which are curious and very interesting as showing how our ancestors learned to make a fire.

Another way of obtaining a fire is by percussion. Have you seen a spark when a horse struck his iron shoe upon something hard? Perhaps a cave man struck a rock with his strong ax and noticed a spark shining in the darkness; or perhaps some dry leaves

caught the spark as it flew, and a fire was made. There was no danger of children making a fire in those days, for it takes great power to get fire in this way. A strong man, however, can strike two stones together with force enough to bring a spark of fire. This spark must be caught in dry leaves or moss, and often it takes a very long time to get a good fire.

The discovery and use of fire was a great step in advance for primitive men. Around the hearth where the fire was built and where it was carefully watched and kept, men, women, and children gathered. Here was warmth, and light, and food. Here was protection from wild beasts. After the day's hunt or work all hearts turned to the fire. The house or cave or cliff was not so much their home as was the hearthstone, the sacred fire spot.

The fire god was not forgotten. At the hearth he was thanked for the gift of fire, and a piece of meat was offered for his eating. Sometimes the meat was thrown into the air, where they thought the fire spirit had his home; sometimes it was left on the hearth for him to come and take when he chose. In this way the hearth became an altar, and the altar fire was built and kept in honor of the god of fire.

We send messages now by letter, telegram, or telephone. In the prehistoric age, fire was the quickest way of giving signals at a long distance, so fires were built on mounds or high places as a sign to friends far away. Fire may be seen from great distances in the dark. Columbus saw a light

shining into the darkness from the shore of the New World before he could see the land.

The Indians of America used fire for signals and they used it also when meetings were held. They would bring out their pipes of clay, fill them with tobacco, and light them from the camp-fire around which they sat. The Indians thought the Great Spirit liked the odor of the fragrant weed, and the pipe was used at all feasts or public gatherings.

Fire Signals as used by Indians, even in Recent Times

Before man discovered fire he had to go to rest with the coming of darkness and rise with the sun. When he knew how to use fire he could be more comfortable and could conquer the dark a little. For fuel he had wood, and in some countries peat or dried turf, which was cut up into small pieces and

made very good fire. Peat is turf that has grown in marshes and as it decayed has been packed into close layers by the water. Soft coal has been known less than three hundred years, and hard coal was not used until much later.

The first lamp was perhaps a splinter of wood. Men must have noticed when they were roasting their meat how fat burns with a flame. As soon as they learned how to use the fat, they must have found things to put it in while it burned, and so made the first oil lamp. They must have found out also that pine knots made good torches, and in time they learned how to make a torch of grass, soak it in grease, and then burn it. The Eskimos use whale-oil for fuel and light. A candle is a kind of oil lamp. The oil is hardened around the wick and burns in the same way as the old oil lamp.

Prehistoric Lamp of Chalk in British Museum

Earthenware Lamp for burning Fat

Kerosene lamps came into use only about the middle of the last century. They give much better light than candles or oil lamps, but they burn in the same way, by means of a wick.

CHAPTER X

COOKING

We have seen how the men and women of the early ages got their food and what they found to eat. Now we shall learn how the food was prepared for eating. Some of our food we eat uncooked: fruits, nuts, some vegetables, and milk may be so eaten, but most of our food requires the use of fire to make it good.

There are three ways of cooking: by roasting, baking, and boiling. The first was the easiest, the second more difficult, and the third the hardest of all for a primitive people. They first learned how to roast meat over the fire. Vegetables and roots which they had found were good to eat, could be cooked in the wood embers. Savage tribes cook in this way to-day, and among civilized races when away from stoves, food is often roasted by open fires or in the ashes. Stoves such as are used to-day are not more than one hundred years old, but the ways of cooking have remained the same since the earliest ages.

When the woman of the Stone Age wished to bake, she dug a pit in the ground. This she lined with stones. Filling the pit with wood, she built a fire.

When the stones were very hot, she took out the embers and covered the stones with green leaves. The flesh was cleaned and wrapped in thick leaves, and put into the pit. Then came a layer of hot embers. Upon this she put a layer of yams and roots wrapped

How the Women of the Stone Age Baked

in leaves. Hot embers and stones were placed over these, and lastly she covered the pit with earth. The meat cooked in this way was very tender and juicy.

Our New England grandmothers did their baking in much the same way, in a brick oven standing outside the house, but in later years usually built in the interior beside the kitchen fireplace, with the smoke vent opening into the large, square chimney. After a big fire had been burning in the

oven, it was all raked out and the oven cleaned of ashes. Then the bread and cake, the puddings, and pork and beans, were put in. These ovens were very large, and sometimes forty or fifty dishes were baked at once. The bread was often rolled in

An old fashioned Kitchen with Brick Oven

cabbage leaves. Occasionally even now in some old-fashioned New England family, the aged grandfather insists that his beans and brown bread lack the delicious flavor to which he is accustomed, if baked in a modern range. So on Saturdays the baking is done in the brick oven of the old homestead.

Now let us inquire into the boiling of food. A pit was dug as for baking and lined with stones. Then the skin of some large animal was put into the pit. The skin lining held the water for the boiling.

Cold water was put into this skin-lined pit, and the meat also. But where was the fire? At some distance from the boiling pit another pit was dug and stones were heated in a hot fire. When they were hot enough, the stones were rolled into the boiling pot, the water was heated, and the boiling of the meat was begun. You can imagine the hissing noise these red-hot stones made in the cold water. A cover of woven twigs and grasses was put over the pit. Upon it were placed the potatoes or eggs to be cooked. Coverings of leaves protected the eggs and vegetables from the earth which was thickly spread over to keep the steam in the pit. The eggs and vegetables were cooked by the steam and were very good indeed.

A Boiling-Basket of the Stone Age

The "stone-boilers" is a name given to these people who had advanced beyond baking. They had learned to make boiling-baskets of sticks and strips of wood, bark, and clay. These baskets were water-tight.

It is thought that woman invented all the ways of cooking, and that the need of fire for this purpose was the beginning of a settled home. When men ate uncooked food they could wander from place to place. But when they cooked their food, they kept

near the fire, because it was so hard to make a fire that they tried not to let it go out. Although the men went far to hunt and fish, they always came back to the fire, where the women and children were waiting and where the meat was cooked.

Salt is something that men have always needed. They have traveled far and suffered much to find it. They have been known to sell their wives and children in order to obtain it. Where it is scarce, the children think more of a lump of salt than our children do of candy. The ancient people who lived near the salt sea, or salt lakes or springs, learned how to get salt from the water. By letting water flow into a ditch and then evaporate, the dry salt remained.

Earthen Pot and Ring

The ring was placed on the fire and the pot set in it. The ring distributed the heat evenly so that the earthen pot did not break

In Roman times money was paid to the soldiers for the "salt money," and so the word *salary* comes from the word that means salt. Again, to say "He has eaten of my salt" means that the man has eaten at my table and so is my friend. In some countries to say that a man flavors his food with salt means that he is rich.

CHAPTER XI

POTTERY

When women had learned how to boil food, their next demand was for a pot, waterproof and fireproof, in which to do the boiling. The pit in the ground, lined with stones, with the second lining of

Some forms of Pottery of the New Stone Age

skin, was the beginning of the boiling-pot. With the need would come the thing wanted. This is always so. "Necessity is the mother of invention."

Pottery is the art of making things out of clay that baking will make as hard as some kinds of stone. In the Stone Age some of the earthenware was baked and some only sun-dried after it had been made into jars, cups, plates, and pots.

It is not easy to tell whether pottery or weaving

came first. They were not far apart, for one seems to demand the other. In the cover of the boiling-pot we have a kind of simple weaving, and the dirt or clay packed down upon it soon was hardened and became part of the cover. When these ancient people saw the effect of the clay upon the woven cover, the idea came to them of making not only the cover but also the boiling-pot itself.

Impressions of Weaving on Ancient Pottery

They may have had some help in their invention from watching the birds weave their cozy homes of grasses and cover them with clay. The wasp also is a regular potter. He makes a beautiful and solid kind of cliff house out of mud and clay. This the wasps did long before men and women learned the art, and they are really the inventors of pottery. But they build only their nests; mankind has gone on and improved the invention and has made many useful and beautiful things.

No pottery has been found that is known to have

belonged to the Old Stone Age. The people who lived then, perhaps, had all they could do to keep away the fierce animals and get food. Pottery means a somewhat settled life, coming after man has ceased to roam day after day. None of it is found in the oldest remains. If man had anything of the kind, it must have been sun-dried and has not lasted. Only baked pottery can last for ages. The pieces that have been found belong to the New Stone Age, old to us, but not so old as the cave man and the mammoth beasts.

An Earthen Pot of the Mound Builders
From a mound in Wisconsin

Some pottery, however, is found buried which turns to dust as soon as the air strikes it. This was probably sun-dried, not baked. Men have made a liquid which can be poured upon this kind of pottery, to make it hard and so save it. The museums have many hundreds of vases and jars that were made thousands of years ago. They are sometimes beautifully shaped and ornamented. These jars and vases were made without a potter's wheel. All pottery now is shaped with the help of the wheel. We know how difficult it is to draw a perfect circle, but it is more difficult to make a perfect circle of clay while shaping a cup or pot or jar without the aid of the potter's wheel. In the old time cocoanuts or gourds or horns were used as patterns. In

shops where clay vessels are now made the clay is driven into perfect shape by machinery.

It is probable that the ancient people used a mold, and that mold they made by weaving. The utensils were made, of course, when the clay was soft. The potter pasted the clay against the outside of the basket, and when it was dry enough gently lifted

Making Coiled Ware in a Basket Mold

the basket out and baked the clay. Then they had a water-tight boiling-pot. Some baskets are woven tight enough to hold water, but unless they are daubed with clay they will not stand the fire.

Some primitive pottery was made by coiling. The illustration shows that the clay was first rolled out in long ropes and then coiled round and round. Beginning in the center of the bottom, a sort of coiled mat would first be made. Then as it grew it would be brought up within the basket, the

coils pressed together and smoothed to make one solid piece, beautifully even and nice.

In making pottery to-day the same things must be thought of that were known ages ago. The clay must be very fine and smooth and even, or it will crack when baked. The clay must be wet, or it cannot be molded, and it must later become dry,

Basket, Bowl as Base Mold for Vessel
Showing smoothing process after coiling

or it is of no use. How to change clay from wet to dry without spoiling it is a great art.

The cave people sometimes went miles away from their homes to get the clay. Then they had to make it fine and even by working it with both feet and hands. When the clay was ready, it had to have pieces of stone or crockery or grass mixed with it to keep it from breaking. The cave people knew this ages before the Egyptians and Babylonians

learned how to put straw into their bricks to make them last.

The most beautiful urns, vases, food baskets, and water jars are found in the caves and mounds where the dead were buried. Thousands of these wonderful objects have been taken from the mounds and there are thousands yet in mounds that have not been explored. They are ornamented in many ways. Lines are painted upon them, and sometimes stories are worked in by pictures of different objects. Some of this pottery of prehistoric races is very beautiful. The colors were made from vegetable dyes and last through the ages.

Image Vessel from Arkansas
Made by the Mound Builders

Painted Vase
From mound in Georgia

The people of Scandinavia, France, England, and America have spent much time and money in gathering these remains of the art of prehistoric races. Their museums are filled with the wonderful things they find. When they dig into some old mound or tomb and find some relic of prehistoric man, the news is

telegraphed all over the world. The work is slow and costly, but it is worth all the trouble and the money. To learn about prehistoric man helps us to understand our history and ourselves.

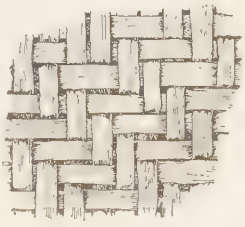
Decorated Urn of the latter part of the New Stone Age

CHAPTER XII

SPINNING AND WEAVING

The art of weaving produces all the clothing we wear — cotton, woolen, linen, and silk. Blankets, curtains, table linen, carpets, rugs, and beautiful tapestries are all the products of the loom. Straw hats, wicker and rattan furniture, and the many varieties of baskets are plaited or woven.

When the primitive people made covers for the boiling-pots by weaving strips of wood as kindergarten children weave their paper mats, they invented a great art. They knew only the simplest kind of weaving; but some mats and baskets are still woven in this way.



Primitive Weaving with two Splints

There is another way to weave baskets which is not so simple. Primitive people in North and South America and in Africa still weave in this way. Two splints are taken instead of one, and a kind of diagonal pattern is brought out. In wicker work many fancy patterns are made. This kind of weaving is shown also in our cane-seated chairs. Prints of wicker work are still found on some clay jars and vases made in

prehistoric times and so we know that the ancient people wove in this way.

The pot made of a coil of clay gave them the idea of making a basket in the same way. So we find baskets made by coiling the root or rod round and round in the shape desired. But the coils were sewed together. A hole was made in the coil by

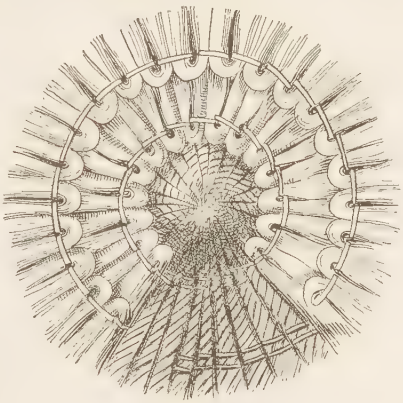
Coiled Baskets are still made by the California Indians

means of a sharp bone and then the strip of grass or skin was stuck through the hole, and the coils were thus held together. It was no easy task to make a basket in early days. Even now among the Indians a squaw is sometimes busy for a month in making one basket.

Baskets were very important in the life of the primitive woman. They were lighter for her to carry than the clay jars and would not break. The women and children used them to gather nuts

and seeds in and to store them in after they were gathered.

Mat making, hat plaiting, and all such work as does not require a loom is done like the weaving of baskets. The soft and expensive Panama hats are made by hand, although some of the weaving looks like the work of a loom. In Mexico and in Africa where the natives now do this work they weave so quickly that the eye can scarcely follow the swift motions of their hands.

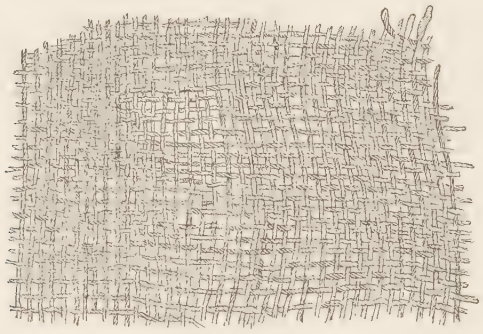


Flax woven by Lake Dwellers
Probably the top of cap

All this weaving has been done of material easily made ready for the work. But when cloth is to be woven the material must be prepared. The first cloth or clothing was, of course, the skins of animals — and useful, warm clothing they made. In warm countries the inner bark of some trees makes fine cloth. We must remember that all cloth made by primitive people was made by hand. A single garment or mat was made at a time. The work was difficult and very slow. Great patience was required. But the cloth was good and lasted a long time.

Before cloth is woven there must be a thread. The art of spinning is used to prepare the thread. The first idea of making a string out of something and then weaving this string, was a wonderful step in the work of life. For all kinds of cloth are made of strings woven together. The kinds of cloth depend upon the material of the string and the way it is spun.

Every part of the earth has its own material

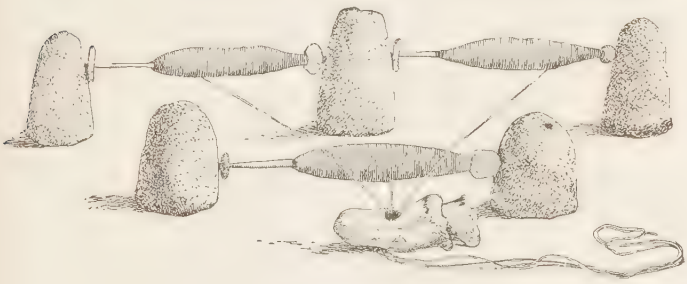


Piece of woven stuff of the New Stone Age

for string and the people have made good use of it. The Arctic peoples make string of sinew — as fine as our best cotton, but much stronger. The Chinese and the Japanese make silk thread of the cocoon of the silkworm. In the islands of the Pacific a very useful cord is made by braiding the fibers of the cocoa. Houses and boats and implements on these islands are not nailed or riveted, but are tied together by this cord. The materials now used for cloth are made from the wool of sheep and goats;

from flax, which makes linen, and from cotton, which makes cotton cloth.

The first spinning was managed by rolling the fiber on the leg with the hand and then twisting pieces together. Later the spindle was invented and the fiber was twisted around it. There was a long time when all spinning was done in that way. Livingstone, the great traveler in Africa, said that "a woman was scarcely seen going to the fields —



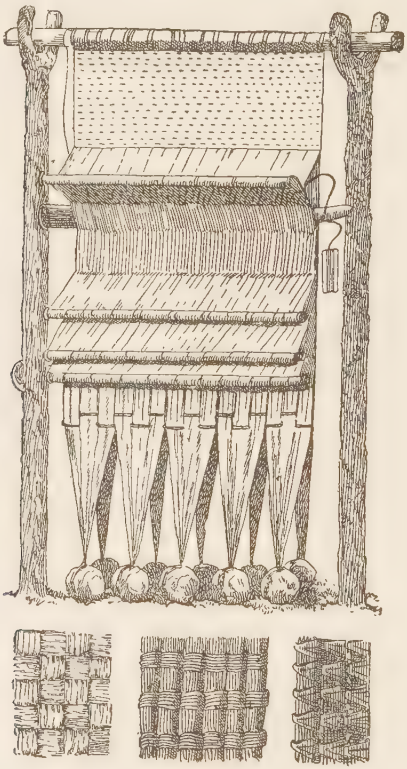
A Prehistoric Spinning-Reel

though she might have a pot over her shoulder — but she was employed in spinning."

Then the spinning wheel was invented, and was still used in the time of our great-grandmothers. First a bunch of wool or flax was carded; that is, it was combed into smooth strips by means of sharp-toothed implements. When the wool was ready, the spindle was set whirling and pulled out the material and twisted it at the same time. Then the thread, by the motion of the wheel, was wound around the spindle. Spinning now is done in great

factories and the spinning-wheel at home is used in few places.

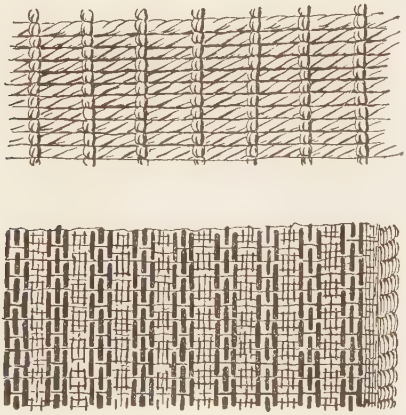
Primitive weaving was usually done out of doors.



Loom and Fabrics of the Lake Dwellers

The strings of the warp were fastened at top and bottom. The woof was wound about the long shuttles. These shuttles were put through, in and out of the warp strings, leaving the woof woven into

the warp and held in place. Different shuttles held different colored threads and were made up into designs or patterns. This kind of loom was not like the later looms in which the warp threads can be moved.



Specimens of Cloth made of Flax by the Lake Dwellers

CHAPTER XIII

THE TAMING OF ANIMALS

The taming of animals is always full of interest. Snakes, elephants, monkeys, dogs, cats, birds, lions, bears, and tigers yield to the will of man and obey his word. Some of these animals are tame only in captivity, and even then few men or women dare to trust themselves in the cages where the animals are kept; but others, such as the horse, dog, and cat, have been domesticated so that they are almost always peaceable and friendly.

Head of a Horse engraved on bone by a Cave Dweller

In many ways men are less able than animals. They are not so large, or so strong as some animals, so keen-scented, so far-seeing, or so swift of foot as others; but they have power of mind that animals do not have. It is by this mental power that they have conquered some of the animals and made them of great service. The huge elephant, strongest of beasts, will use his strength in the service of his master, obedient to a

word or a touch. This animal is very intelligent and can be trusted to care for a little child whom he could crush with a single blow of his trunk. The elephant is best ruled by kindness, and he never forgets to revenge himself on the man who mistreats him.

The first animal that became man's friend was the dog. Man found that the wolf-dog would help him to hunt other animals, so he made friends with him and fed him, and the dog soon learned to love and protect those who were kind to him. The dog has been much improved by living in the homes of man. At first he was a wolfish creature, fond of tearing everything to pieces. Man seems to have bred the wolf-like nature out of the dog and a good dog now hunts only what he ought to hunt. The dog is man's first and best friend among animals and is very faithful.

An early type of Dog

With the help of the dog man soon tamed other animals, and the goat and sheep became domesticated. By using his wits man learned to make traps and snares and to dig pits for the large animals. The camel, the llama, the elephant, the horse, the ass, and the cow all became his servants and made

life easier for him. Man in turn improved the animals that he tamed, and they are now very unlike their ancestors of the Stone Age.

Figure of a Dog on a Prehistoric Clay Lamp found in Greece

The woman of the early ages soon found that rats and mice made her labor in collecting seeds of no use. She gathered the seeds and placed them in her granaries but these little pests made their way into the stores and ate the seeds. But she found a friend in the cat. This animal hunted the rats and mice and so the woman fed it and made it welcome in her home. The cat has become a tame creature, although its cousin, the wildcat, remains dangerous. But the rats and mice are still wild and run in fear from cats and men.

Wild Horse drawn by a Cave Dweller on the wall of a cave in Spain

Of all the animals man has tamed, perhaps the most valuable and useful is the horse. Is it not

strange that this strong, wild creature, fiery and untamed ages ago, will obey the slightest touch, even the voice of his master? But the horse has been greatly improved by the treatment and training of man. At first he was a wild, fuzzy animal, and small, though not so small as the donkey is now. Man has

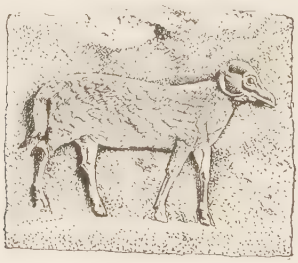
Horse resembling the Ancestors of the Arabian and other Horses of Asia

made him a large, sleek, and gentle animal, willing to submit to saddle and harness. Harnessed to wagon or plow, to car or machine, thousands of these great creatures are working for us early and late.

A man who abuses his horse is not worthy of our respect. Yet many men are ignorant and cruel. Laws have been made to punish those people who beat the patient horse that tries beyond his strength to draw the heavy load.

Man owes much to the animals of domestic life. His food and clothing are in part derived from them and much of his work is done by them. It is difficult to imagine a world without the presence of the useful animals. Men have foolishly and wickedly destroyed some animals they might have tamed, and some birds that were useful, beautiful, and exquisite songsters.

"God made all the creatures, and gave them our love and our fear,
To give sign that we and they are his children, one family here."



Sheep of Very Ancient Times
From a monument in Assyria

CHAPTER XIV

THE MAKING OF LEATHER

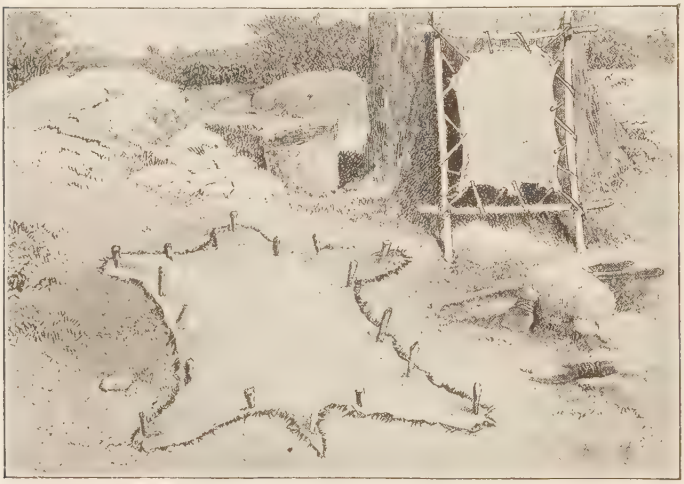
One of the most important materials in our life is leather. Every day every person in civilized life uses it in some way. Our shoes are made of leather, carriages are trimmed with leather, harnesses, trunks, bags, gloves, and book covers are made of it. We have parchment from sheep, calfskin for shoes and for book covers from the calf; our library sofas and chairs are covered with leather of different sorts; belts and pocket-books, and many other articles, big and little, are made of this useful material.

Primitive man learned how to prepare the skins of animals so that they would be soft and pliable. They were used for clothing and for the walls of dwellings. Sometimes the hair or fur was left on the skin.

But leather is the skin of the animal stripped of the fur or hair as well as separated entirely from the flesh. In spite of its common use leather is very valuable. This is because so much work is required to make it ready for use. Materials may be very common, but if much work and time are necessary before they are of service to men they will be ex-

pensive. Leather, while not so elastic as rubber, is better for many things because it is not air-tight as rubber is. Rubber is a recent discovery and our forefathers knew nothing of it.

Since leather is not easily prepared for use even now, when we have machinery and the great tan-



Methods of Stretching Prepared Hides used in the New Stone Age

neries where every invention is used, it must have been very hard work for the people in savage times. Among the savage tribes now living the art of preparing hides for clothing and water-bags is known, and we can learn from them how the work must have been done thousands of years ago.

When the men in the Stone Age came home from a long hunt, they brought the flesh of the animals they had killed, cut up into quarters, ready for

the work of the women. These pieces the women salted, or dried and smoked for future use. But the pelts of the animals were not easy to care for. The hair and some of the flesh still clung to them. How could this rough, stiff animal skin be made soft and pliable? No matter how hard the skin was, it must be saved as it was so much needed. First it was soaked in water to soften it. Then it was held firmly and the hair scraped off by means of a sharp tool.

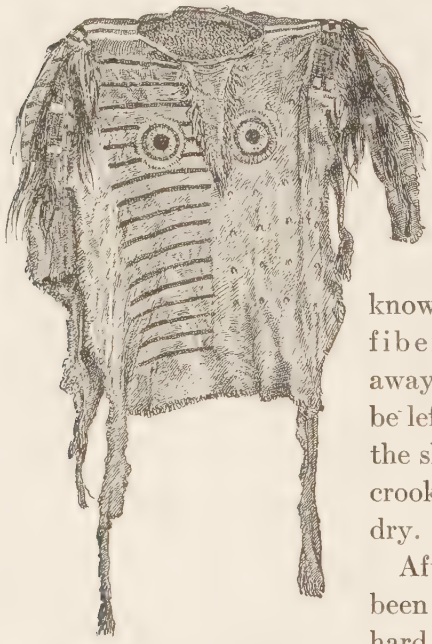
Thousands of these skin-scrapers have been found in the caves of the Stone Age. They are generally made of stone, but bone and ivory skin-scrapers are also found. Those that have handles left on them seem to be mostly handle. The knife part is not large and looks like a chisel. The scrapers had to be used with great strength, for the skins were tough and the hair was hard to remove.

Skin-Scraper

These scrapers are in all sorts of shapes, as well as of different materials. The oldest are of stone and have no handles, but sometimes the stone knife is fastened into a handle of stone; and sometimes wooden handles are fastened to the scrapers by raw-hide. These wooden-handled scrapers are not old, for wood will not last as stone will, and the wooden handles prove that these scrapers have been used since the Stone Age. Some stone

implements may be new because savages even now sometimes prefer the stone weapons to those made of other material.

When the skin was properly cleaned and scraped, it was soaked and stretched and dried, and soaked again, until it became soft. Sometimes skin is so tough that even all this work will not soften it. What do you think was done then, and is done even now where tanneries are unknown? These tough fibers were chewed away! They must not be left on, for they draw the skin up and make it crooked and stiff when dry.



Leather Jacket of an Indian

After the leather had been prepared with such hard and long labor it was ready to be made up into clothes and moccasins for the family. Clothing of soft leather is very warm, light, and comfortable. Moccasins are the best shoes for swift running and must have been a great help to man in his long hunts. The needle was of bone and the thread of

sinew, but the clothes of those old days lasted longer than most clothing made now.

The brains of the animal were used to oil the skin. Sometimes the skin was stretched on a frame to dry, but it was softer when it was stretched by hand. For the best leather the skin was oiled thoroughly and pulled all the time it was drying. Perhaps people worked at one hide for days, so

Moccasins

hard was it to prepare the skin of animals for the use of man before the art of tanning was discovered.

When men found out that the tan-bark of trees would make the tough fibers soft, then this hard work became unnecessary. Now the great tanneries of the world prepare thousands of animal hides in the time it took the primitive people to prepare one, but they first found out how to make the hides of animals useful and valuable.

CHAPTER XV

DRESS

Clothing is now worn for warmth, for modesty, and for ornament. It is strange to think that at first men wore dress for ornament only; they believed that they were making themselves more beautiful. So the first dressing was of rings in the nose and ears, and bands on the arms and about the ankles.

In the early ages men cared more for ornament than women did. The women made the clothing and dressed the hair of the men, adorning it with head-dresses of various sorts. It was the fashion among many tribes to paint the face and body with bright colors and in odd designs. Among the American Indian tribes to-day the squaws try to see which one can make the finest suit of ornaments for her husband. The women among civilized people now seem to think more of dress than the men; at least they wear more ornament.

Dress is useful in helping us to tell one person from another. We look more like one another when dressed alike. It is hard to tell one postman from another or one nurse in uniform from another. When each wears what he likes best we know one

more easily, and the primitive men and women needed to know one another quickly, for they were always on the watch for foes.

Ornament was used by all people wherever they lived. Porcupine quills, stained with bright colors, made handsome chains and head-dresses. Teeth of animals were strung for bracelets and put upon the fur dresses. Shells were used in the same way. Vanity led the earliest men and women to seek to adorn themselves, and they used the materials close at hand.

Dress of a Cave Dweller in the New Stone Age

The earliest clothes differed with the climate. In cold countries fur and leather were used. When we know how hard the Eskimo must work for his skin clothes, and with what labor they are made, we are not surprised that the women spend much time in adorning them.

In warmer climates bark cloth was used for cloth-

ing. It is easier to handle than the fur of animals. As soon as primitive woman learned to spin and weave woolen cloth she made blankets. Some that we have to-day are of great beauty. The Navajo Indians are famous for the fine blankets they make. They are very strong and last for many years.

Navajo Woman weaving a Blanket

These blankets are valuable because they are useful, durable, and artistic in the Indian style of art.

There are two general styles of dress, depending mainly on climate — the close-fitting fur dress of the people in cold countries and the flowing, loose garments of those who live in warm climates. In primitive races men and women dressed much alike, the men's garments having more ornament. Among the races of the present day women wear the long,

Dress of the Age of Bronze

The garments, weapons, and ornaments are copied from articles found among the remains of the Age of Bronze in the peat-beds of Denmark

flowing robes, richly ornamented, and the men choose the trim, close-fitting garments.

Dress is a matter of fashion, and fashions change.

Perhaps the dress of the primitive people — of the Eskimo, the Indian, the Chinese, and the African — may seem absurd to us because of its form or ornament, but our own fashions seem absurd to those who have other ideas of beauty.

As far as we can know the dress of primitive people we realize that ornament played a large part in it. The idea of beauty, crude and simple though it was, drew them into the painting of the body, hanging huge rings in nose, lip, and ears, in blackening the teeth, binding some part of the body to change its natural form, even enduring great inconvenience and agony in the endeavor to reach their ideal.

A Leather Sandal and a prehistoric Leather Shoe found in Ireland

Such practices exist to some extent among various peoples to-day. Distorting the body, painting the face, coloring the hair, and wearing garments uncomfortable and ill-adapted for use are all indulged in, because we think beauty is to be thus attained.

This longing for the beautiful has helped to keep the race, from the time of prehistoric man to our own day, from journeying downward. It has been a growing toward good and not evil. This striving for beauty has been a struggle upward worth the making, for the thing that is really good is both beautiful and useful.

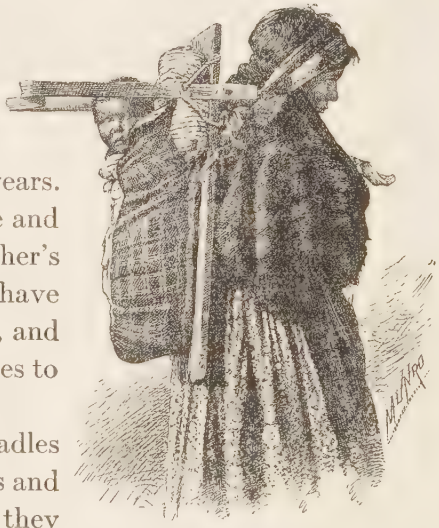
We might learn from the animals and primitive man that we wear too many clothes. The kitten sleeps before a hot fire and then runs out over the snow-covered ground. She does not "catch cold"! The dog and horse seem to need blankets nowadays. We are making ourselves weaker and less able to endure changes in weather. Our faces and hands can endure changes in weather better than the rest of our body, simply because they are exposed to the air. The Indians train their bodies to endure without injury the severe winter weather.

Sandals

CHAPTER XVI

CRADLES

THE young of most creatures are helpless for a time. Some young animals learn quickly how to care for themselves; others are slow to grow. Children need our care for many, many months or years. The earliest cradle and the best is the mother's arms; but mothers have many things to do, and so have made cradles to hold their babies.



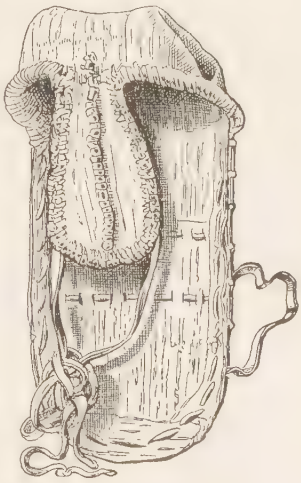
An Indian Cradle

Nowadays cradles are of many shapes and materials. Often they are made of wood, dainty and light and expensive, or plain and heavy and cheap. But every cradle, in the palace or in the cottage, is made soft and warm by the love of father and mother.

The cradles we now use are larger and heavier

than those used by the primitive people. We do not use them, as they did, to carry the baby in, but only for his bed. When we see a woman with long skirts carrying a baby in long dresses up the steps to an elevated train, we wonder if she would not like to have her baby in an Indian cradle.

The primitive woman had worse climbs than a flight of stairs, but she was wise and did not hamper her steps by wearing long, clinging dresses. She had to work, so she carried her baby in a cradle strapped to her back. Her hands and arms were free, and, even when thus burdened and with perhaps a bundle on her head, she could climb cliffs or trees.



Birch-bark Cradle

When the baby was three or four days old, the mother put him into his bed of soft moss as light and fluffy as wool. She could not stay at home for months with the baby, for among the primitive people every one had to do her share of the work. She took the baby with her. Babies like to be carried, and no doubt the primitive baby enjoyed his journey.

When the woman went to gather nuts or rice, she would take off the cradle and lean it up against

the trunk of a tree or hang it from a stout branch. Here the breeze would move it gently to and fro, and swinging there the child would probably give very little trouble to the mother except when he was hungry.

It is a good thing to begin well. The best beginning for a baby is to have good parents. The next best thing is to be well trained when young. All parents wish their children to be good, strong, and handsome. The primitive mother wished her baby to be strong, and she tried to make him so.

A Cradle covered with Leather and lined with Moss

She put him into his cradle, which was a straight board with a brace for his feet and a hood for his head. Then she tied or bound him in this cradle so that his back would rest on the board. His legs were strapped down tight, and even his little arms were bound to his sides. This was done because the mother thought it the best way to make him straight as an arrow; and the Indian of our time shows the result of this training. To us it seems very cruel to tie a baby up in this way, but it did not seem to harm the babies of primitive people.

The baby was taken from his cradle when fresh moss was put in. After some weeks his arms were

freed and playthings were fastened to the hood of the cradle so that he could amuse himself. The primitive child learned early to play by himself, for there was no one who had much time to give him. His playthings were easily found and were not so expensive as steam-engines and Paris dolls. Shells, colored stones, nuts, and pieces of soft fur were probably all he had; but the outdoor life, the birds and animals, the flowers and trees were enough to keep him interested and happy.

Sometimes the mother carried her baby astride her shoulders; sometimes in a blanket or basket. The Eskimo baby is wrapped in fur. He is not always in a cradle by himself, but rides in his mother's hood, which is on the back of her fur jacket, because it is warmer for him there. In warmer countries the baby has not such warm clothing, but still he is tightly wrapped in swaddling-clothes until he is strong enough to sit alone. In countries where it is too warm to wear a cloak the baby has to learn to hold on to a strap wound around the mother's waist. It is by studying the primitive races now living in some parts of the world, and by examining the cradles of the primitive people gathered in the great museums, that we learn about the babies of the earliest times and their cradles.

Although the babies of the primitive people were bound tightly in their cradles that they might grow straight and strong, we are just beginning to learn that it is better not to bind their little bodies, but allow them to grow freely. We have many fashions in dress now that bind the body; but when we learn that to have strong, free minds, we must have strong, free bodies, it will be the fashion to have the body unbound.

Wicker Cradle

The happy person is the one who has plenty of work that he likes to do. Children all like to be busy, and to see other people busy. They are always active, at work or at play. Activity is life; laziness is death. We may be sure that the baby of the primitive ages was happy, for he saw people busy all the time, and he soon learned what work he had to do and was glad in doing it.

CHAPTER XVII

TRANSPORTATION

In the history of man we must learn how he moved from place to place and how he took his property from one home to another. We know that many animals are very much stronger than man is. Many animals can run more swiftly, their hearing is more acute, and their sight keener. The power to think, to reason, to plan and invent, has made man able to overcome time and place. We can bridle the horse and make it do our bidding. The largest elephants work as we direct. The balloon and aeroplane give wings to us as they move through the air, and steam carries us over land more rapidly than any animal can move. We can send letters and telegrams to those at a distance, and can even hear the voice of friends a thousand miles away.

How is all this done? By careful seeing, eager studying, and a noble desire to help the race to advance. Who first thought of taming the dog, and horse, and elephant, and camel? Who first thought of a snow-shoe, a sledge, or a wagon ? All this we cannot tell; but we know all progress is slow, and many centuries passed before men ever thought of

a wheel, which now plays so large a part in the carrying trade — in transportation.

When we wish to go from place to place we walk, mount a horse, ride in carriage or car, or sail over the water in sailboat or steamship. What did the primitive man do? His feet and his hands must take himself and all his goods. The primitive races were better walkers and faster runners than we are. They were better climbers also, as they had no elevators to carry them up, but must climb from branch to branch, or hang to the ladders or cliffs, as they sought for safety in the forests.

Woman of Primitive Race carrying Jar

Woman was the first beast of burden. She made baskets and jars to carry on her head, and fashioned out of the hides of animals the water jars which she swung from her shoulders.

When the dog and horse had been tamed, they learned to help the woman, and were trained to carry heavy loads. Roads and wagons go together, and the primitive people had neither. The women and the animals had to pick their way as best they could along narrow and rough paths. What strength, patience, and courage they had! What respect we

should have for these early people because every obstacle overcome, every hardship endured bravely, made the race stronger, and made our life easier.

In many countries now men are trained from boyhood to run swiftly, carrying letters and messages from place to place. They draw the light carriages or, in groups of two or four, carry passengers swung in hammocks. In these countries the roads and streets are very narrow.

Basket for the Back
With band to pass over the shoulders and forehead

In cold countries men learned to make and use the snow-shoe. They help themselves along with a pole, to the bottom of which is fastened a snow-shoe. The idea is to spread the weight of the runner over a greater surface, and then he can run rapidly over the crust of snow without so easily breaking through. Finally the idea came to men that sledges could be made on which to put their bundles, and these could be drawn by the reindeer and dogs.

We must remember that although steam and electricity now carry much of the load of the world, almost every person carries something from one place to another, and helps in the business of transportation. The engineer of a train or steamer with a slight movement of his hand starts the train or boat, and thousands and thousands of

pounds move as easily as a baby pushes her doll carriage. The mind of man has lifted the pack from the backs of men, women, and animals, and has harnessed steam to pull the load.

This is true only in part. In many countries the

How freight is often carried in Southwestern Asia

carrying is yet done by men, women, and animals. In this way they move not only the light parcels that we often carry, but the heaviest of packs. The llama, the donkey, the camel, and the elephant are great workers, and are most valuable to men, because carrying the greatest loads and moving the heaviest objects. We all know the help dogs and horses are in all countries where business is carried on.

After all, the freight of the world is carried by

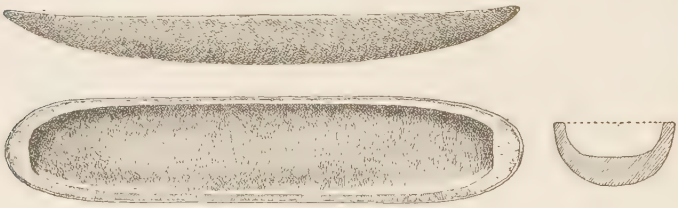
the feet and hands of the men and women who travel and carry, or who direct those who carry. Atlas with the world on his shoulders, and the Caryatides who hold up the beautiful temples of the Greeks, are true emblems of the loads men and women carry. Every one has a right to stand erect and not to have a burden so heavy that he bends under it. Every invention that makes men's burdens lighter is a blessing.

A Primitive Carrier

CHAPTER XVIII

TRAVEL BY WATER

We have learned how primitive man plodded over bad roads or was aided by snow-shoes when snow and ice covered the ground; and how the dogs and horses helped carry his burdens. But what did man



A Boat used by the Lake Dwellers
Twelve feet long, 2½ feet wide

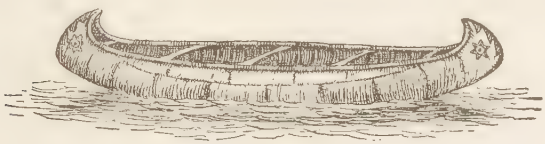
do when he must cross streams and rivers? He early learned how to swim; but he could build no boats such as we have, because he had no tools. Without saws, planes, and chisels it was impossible for men to build strong, large boats.

A "Dugout"

A tree floating in the water would give man the idea of making a "dugout," which is the most

primitive of boats. The trunk of a large tree would be hollowed out so that men could sit in it and put some household goods in it. They could use their stone axes to hollow out this tree, or they could burn out the wood. This work was slow, and the boat was heavy, yet many such "dugouts" were used. Some savage tribes use them now, and they may be seen in the museums.

A light boat was made by weaving light wood together, and covering this raft with the skins of



A Birch-bark Canoe

animals. Bone needles and thread of sinews were used to sew the skins together. These boats were light, and would hold but one or two persons. Sometimes canoe-shaped boats were made, covered with skins. The birch-bark canoes of the Indians are light and graceful, but small, and easily upset unless great care is taken. Skins of animals, inflated with air, will float on the water as balloons filled with gas float in the air. The primitive men sometimes used these skin water-balloons to help them in swimming, or placed several of them under a wooden raft to keep it afloat when heavily loaded.

When men moved long distances for food, they carried many of these light skin-covered boats with

them. Sometimes they journeyed one or two hundred miles before they came to the great river where the boats were needed. On the journey they had to see that the boats were not too dry, for then the skins would crack, and the boat would sink when placed on the river.

When the primitive men started on a long journey, as they often traveled hundreds of miles for food, or for a new home, they had to think of several

A Boat with Frame covered with Skins

things. In the first place, they must have food. They knew how to prepare grain of various kinds, and to pack it in small bundles. The flesh was dried, and seasoned, and packed. This would be something like our dried beef and condensed food. They knew the value of many medicinal plants, and would prepare medicine for the journey.

Then the primitive man must know how to direct his journey. Living out of doors, he understood the signs of the forest. He caught the winds in his ears, and listened to their advice. The sun guided him by day, and the moon and stars by night. His keen scent taught him what to use, what to

let alone. His bright eyes saw the distant animal or man, and he knew friend or foe. Primitive man knew that animals, by instinct, travel by the easiest and most direct paths, and so he followed their tracks. In our country the white man has followed the trail of the primitive man, the Indian, and many of our roads and railways are made along the paths of animals and Indians.

Another thing the primitive man had to know was a good place for a camp. One cannot travel all the time, and it is useful and necessary to

A 36-foot Boat found among the remains of the Lake Dwellers

know when and where it is best to halt and rest. Then a shelter must be made; the boats and skins that have been carried could be made into a tent. If the journey was in hot countries, the mat, or the hammock, or the bare ground would serve as a bed. If snow covered the ground, the primitive man could rest and sleep wrapped in his fur blanket, tucked in by the snow.

When primitive man came in his journey to a chasm which he could not leap over, whose sides he could not climb down or up, how could he cross it? Perhaps the first bridge would be the trunk of a tree. Where no forests grow he would invent another kind of bridge. We find suspension bridges

in some countries now built in the same way the primitive man made them. Ropes of withes — tough roots and strips of wood and grasses — were braided. These were fastened to rocks, four cables

A Suspension Bridge built by a Primitive Race

forming the floor of the bridge. These cables were covered with sticks to make a walk, over which men, women, and animals went fearlessly and safely, sometimes carrying heavy bundles.

CHAPTER XIX

THE FAMILY

Every one born into our world has ties that bind him to his country, to society, to his friends, and his family. To us, who live in families, and to whom family ties and family love are the strongest, it is very strange to think of life without these ties. If people did not always live in families, how did they live, and how did the idea of family life arise?

There was always the tie between mother and child. The mother love is still the strongest, the least selfish love known. This love was always strong. The child slept in the mother's arms, and to her it turned for care and food. Nature demands this care, and mothers rejoice that it is so; for no happiness is greater for a woman than to hold her baby in her arms and know that its life depends upon her loving care.

Thousands of years ago, when we find men living together, they lived as bands of men, women, and children who must unite to protect themselves from their enemies. This was called group life. There was no family life where the father, mother, and their children formed a separate band grouped together,

and apart from other families. The mothers cared for their children only until they could care for themselves; but other ties of relationship, the father, uncle, aunt, brother, sister, and cousin, were unknown.

In this group life the mother was the only bond that held children together in any way. They knew their mother, and her right over herself and her children was the strongest power in this group life. The leader of the group in war and the hunt would be the strongest man, for woman did not fight except to defend her children. As the mother was the only relation known, the woman ruled in matters of government and descent. Property passed from mother to child.

When the men from one group were hunting, they sometimes found a woman of another tribe who had gone too far from her home to look for grains. This woman they seized, took to their own tribe, and made their slave. Sometimes one man would buy her from all the others. So by stealing, by fighting, or by buying, a man would get the woman he wanted for his wife. The wonderful poem, the *Iliad*, tells the story of the stealing of Helen, and of the long war between Greeks and Trojans to regain this beautiful woman.

Sometimes men would capture or buy many women. These women would work, and were valuable as servants or wives. Their children also would increase the wealth of their father by their

work, and in time the father could sell them, or even kill them if he so wished. This kind of life is bad for both men and women. Children can be no better than their mothers, and if the women are slaves, their children will not be strong, brave, or bright.

When the father became the master of many

A Patriarchal Family

wives and of their children, the woman lost all power over herself, her children, and her property. The oldest son in turn became master when the father died, and the women and younger sons must obey his will. Sometimes the ruler was kind and thoughtful of others; but his will was law, and life for the many was that of slavery, which always degrades people. Freedom is life's greatest gift or right, and every one should demand it for himself and for all others.

After many centuries of life in groups, or under one father or patriarch, men found that they were

happier with one wife. Father love grew strong, and through this love men wished their wives and children to be happy and free. Thus we have the only true family based on love — one husband and one wife. Love is the strongest power in life, and father love and mother love make life a blessed thing. Family life grows more beautiful as each member in it learns to love and respect all others in the family. Children have rights as well as duties, and parents have duties as well as rights.

We have some customs yet which belong to the time when women were bought or stolen. The best man at the wedding is now looked upon as the friend of the groom; but he used to go with the man who intended to steal the bride, in order to help him in the fight. The father gives the bride to the groom. This reminds us of the time when the father could sell his children. The bride says she will obey her husband. This remains from the old thought that the wife became the property or slave of the man she married.

The family is the foundation of society. If there is slavery in the family, or deceit or untruth of any kind, society will suffer. Everything that makes the individuals in the home more honest, more truthful, independent, and helpful will make the family stronger and the state firmer. The virtues of character in the home are the virtues in society. Freedom can never be taught by tyrants or slaves. Democratic government can only be kept up by

people reared in democratic homes. The difference between license and liberty must be shown. The best citizen will come from the best family life. Let the boys and girls be trained to be true to themselves, to the highest ideals they can form, and they will not be false to their country.

Gourd covered with Net of Withes

CHAPTER XX

THE ALPHABET

We express our thought to one another in many ways. The artist shows his thought in a picture or statue. The builder embodies his idea in a house and church. Beautiful carpets, laces, furniture, and ornaments are the expression of thought. The greatest, most wonderful, and most beautiful expression of ourselves, however, is in language.

We have seen how man, by long trials and patience, developed language from the desire to express himself and to understand others. By look, by gesture, and by voice we give and receive the best thought we have in our minds. Next to this wonderful language is the power to express our thoughts in characters, by pictures or symbols. The invention of the alphabet is one of the most helpful of man's discoveries.

When we speak together we do not need to spell. We do not need to think of letters or syllables. All we need is to know the words, the combinations of syllables and letters, that express our thought. But when we write — when we wish to send our thoughts to our friends or to leave them in books for people who live after us to read — how shall we show what we mean?

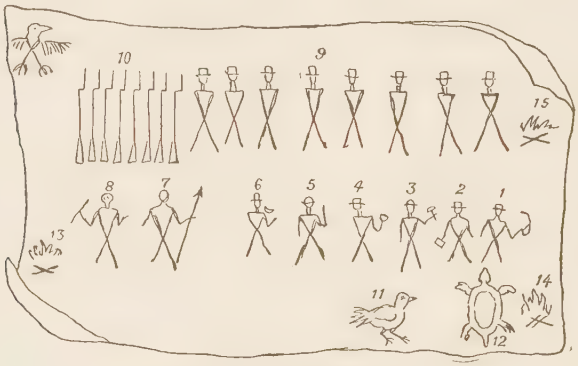
Little children can read pictures before they can read the words made of the alphabet. They will open a favorite book and tell the story from the picture. So they will draw a picture before learning to write. The picture of a man means more to them than the word *man*. The earliest races were like children. The cave man drew the picture of a mammoth on the tusk of that great animal; but he never knew how to write. We can learn much from the pictures the early races made, and which we find in the relics of the primitive man all over the world.

Picture Writing by Primitive Men Engraved on Rocks in Northern Africa

The picture writing of the American Indians, the Bushmen of Australia, the cave men, or of the early Egyptians, is easily read. The great rocks in these countries have many records of the life of the people. The Indians wrote on birch bark and also on the skins of animals. On the next page is a letter written by an Indian, and left behind for other Indians to read.

This picture says that an officer, the man with a sword, with his clerk with a book, and a geologist

with a hammer, and two men with an interpreter are being led by two Chippewa guides, the men without hats. They have eight soldiers with them, armed with muskets. The three camp-fires show that they encamp in three parties. The eagle shows the party to be a government party, and the picture of the hen and the tortoise shows what food they last ate.



Indian Letter on Birch Bark

The next step in writing was to express a thought which is more difficult. It is easy enough to draw an object, and to read the picture; but how shall a thought, an idea, be expressed? Men learned to do this; and this kind of writing is called ideographic — writing ideas. The bee stood for industry, the roll of papyrus paper for learning, and battle was shown by two arms, one holding a shield and the other a javelin. The vulture stood for a mother, because that bird was believed to nourish

its young with its own blood. A bird with open mouth meant hunger, and a calf running toward water meant thirst.

Ideographic writing is hard to read, and as every different idea would need a different sign, it would be very hard to learn. So in time men worked out an easier way to express their thoughts.

They would have a mark or written symbol to mean a certain sound they made when speaking. Some sign would mean *man*. This sign they would

Various Forms of Man used in Picture Writing

change a little if they wished to write *manly;* another change would make *man* into *mankind*. This is the written language of the Chinese, which has six hundred combinations made with the sign *man* for a beginning. This kind of writing is called phonetic, or sound writing. It is very difficult to learn, for instead of learning twenty-six letters or signs, as we must, in order to write the two hundred thousand or more words which our language has, the Chinese must learn forty thousand *different* signs to know the words in their dictionary.

The Chinese are a very slow race, and they have not advanced beyond this idea of phonetic writing

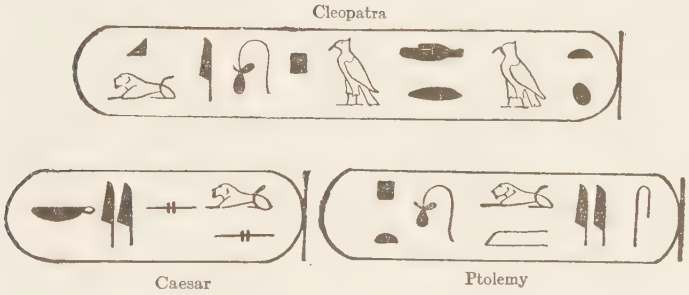
which expresses a word. There is another kind of phonetic writing where signs are used for syllables — not for entire words. There are fewer unlike syllables than words in a language, so fewer signs need to be learned and used if one sign can do for a syllable which occurs perhaps in hundreds of words. Take the words *restitution*, *constitution*, *substitution*, and although they are really three different words with different meanings, they differ

Chinese Picture Writing and Later Conventional Characters

in sound only in the first syllable. Using signs for syllables makes the number less than to have different symbols for different words, and so is an advance on the Chinese system of verbal or word phonetic writing.

The Egyptians, who were a wonderful people, went through the different forms of writing, picture, ideographic, and phonetic, and left many carvings for us to read. These writings in some of the tombs and palaces of Egypt are six thousand years old, and for centuries no one could read them. Modern scholars have learned how to read these histories, and they tell us many valuable things about the life of the people of long ago.

The writing of the people who lived in Assyria and Babylonia is even older than that of the Egyptians. This writing is on brick, and made with a sharp wedge-shaped instrument. Some of the writing is so fine that a magnifying glass must be used to read it. Histories of the kings and of the people are found written on thousands of the bricks



Egyptian Phonetic Writing

that made the great palaces of the kings. This writing was phonetic — by syllables. (See pictures on pages 6 and 7.)

This writing was heavy and difficult compared with our writing of to-day, when so few letters are all we need to learn in order to write and to read everything that can be thought of. The alphabet comes from Egypt, but was used first by the Phœnicians, a great, business-like people, who lived near the Egyptians. These Phœnicians were great travelers, and went from place to place, selling and buying goods. They did not invent the alphabet; but they improved what they found, and then

	EGYPTIAN		PHŒNICIAN	GREEK		LATIN		HEBREW
Eagle			𐤀	A	α	A	a	א
Crane			𐤁	B	β	B	b	ב
Throne			𐤂	Γ	γ	C	c	ג
Hand			𐤃	Δ	δ	D	d	ד
Mæander			𐤄	E	ε	E	e	ה
Cerastes			𐤅	F	ϝ	F	f	ו
Duck			𐤆	I	ζ	Z	z	ז
Sieve			𐤇	H	η	H	h	ח
Tongs			𐤈	⊙	ϑ			ט
Parallels			𐤉	I	ι	I	i j	י
Bowl			𐤊	K	κ	K	k	כ
Lioness			𐤋	Λ	λ	L	l	ל
Owl			𐤌	M	μ	M	m	מ
Water			𐤍	N	ν	N	n	נ
Chair-back			𐤎	Ξ	ξ	+	x	ס
			𐤏	O	o			ע
Shutter			𐤐	Γ	π	P	p	פ
Snake			𐤑	M	ϡ			צ
Angle			𐤒	Q		Q	q	ק
Mouth			𐤓	P	ρ	R	r	ר
Inundated Garden			𐤔	≀	σ	S	s	ש
Lasso			𐤕	T	τ	T	t	ת

Early Forms of the Alphabet

passed it on to the Greeks who made it much like the alphabet of to-day. How thankful should we be to the busy Phœnicians, who had no time to make pictures of everything they wanted to write, and so cut off all the unnecessary curves and gave the plain, simple alphabet!

Simple, yes! but what marvels does it reveal! All the history of man, all the imagination of the poet, all the beauty of the world can be described by these little letters! The memory of man can keep some things safely but for a short time. How necessary then for the progress of the race that we can write down and keep the records of our progress. No real literature, no science, no history, no laws, no religion, can be assured without the help of letters.

CHAPTER XXI

TRADE AND MONEY

The beginnings of trade, like all other beginnings, were small. There was a time when each family or tribe produced all the necessities of life within its own home. They hunted for food, they made their own axes and spears, and fashioned their own clothing. We can easily imagine, however, that an exchange of goods might go on even here, for one man might make better spear-heads than another, and might exchange them for a battle-ax or a deerskin. This buying and selling, or exchange of goods or service, is commerce.

As we speak of commerce now we have the idea of money, but there was a time when no money was known. Then small quantities of grain might be exchanged for furs or weapons, or one might purchase a desired weapon by doing some work for the owner. When tribes met and knew one another, this exchange of goods would occur. Such exchange goes on now between men and tribes and nations.

Among primitive peoples gold, copper, tin, bronze, silver, iron — in fact, all the metals they knew — were regarded as merchandise. A man's wealth was reckoned at various times by the number of skins,

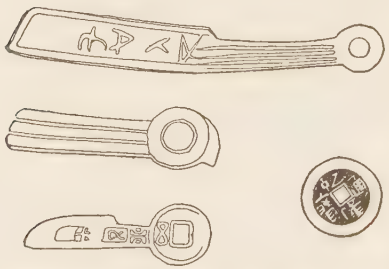
weapons, slaves, sheep, goats or cattle that he had. Even among people as far advanced in civilization as the ancient races of Egypt, wealth was reckoned by flocks and herds, and when they traded things by weight, they used balances in one side of which they placed the thing to be sold, and in the other weights of metal in the shape of goats, sheep or oxen.

Egyptian Wall Painting, showing Balance with Weights in the Shape of Animals

Boys often trade knives, or marbles, or tops. The exchange is not always an even one. As boys have something "to boot" when the articles are not of equal value, so men very soon found that they must have something they could use to make the bargain even. This useful article is money. Money must be something precious in itself, as is gold or

silver, or it must be valuable because of the work put upon it, or people who use it must consider it very precious and so be glad to use it as money.

At first people used as money things that had value because of other uses to which they could be devoted besides making change in trading. The ancient Britons used tin, the early Phoenicians leather, the Greeks of Sparta iron. At a later time nails were used as money in Scotland, cubes of pressed tea in Tartary, and salt in Abyssinia.



Chinese "Knife Money" and its changes in form until it became the modern "cash"

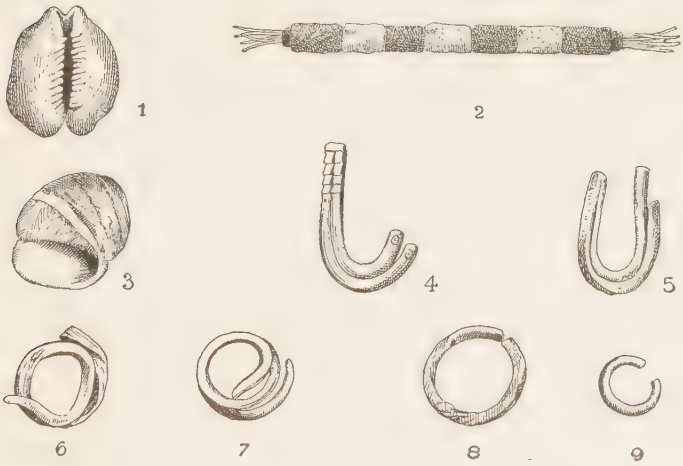
On the coast of Africa the natives used small shells for money. Along the Persian Gulf they used fishhooks, and when they began to use silver they bent the silver wire into the shape of fishhooks to use for money. On the northern shores of the Black Sea, men at first used fish for money, and when they began to make bronze coins they made them in the shape of a fish.

Among the early Chinese, pieces of silk and knives were used for money. Later, when they began to use metal money, they shaped the pieces to resemble cloth and knives. Still later the shapes were made simpler, and the copper "cash" that the Chinese

now use, takes its form from the end of the handle of the ancient knife money.

The first gold money was made of wire bent into the shape of a ring. Some of this ancient gold money has been found in Sweden and in Ireland.

The Indians thought much of their money, or wampum, as they call it. Wampum was made of



Primitive Kinds of Money

1. Cowrie shells used on the coast of Africa. 2. Indian Wampum, made of white and colored shells. 3. Silver in form of a shell, used in southeastern Asia. 4 and 5. Fishhook of bronze used on the shores of the Persian Gulf. 6 and 7. Coils of gold wire used in prehistoric Scandinavia. 8 and 9. Gold money of prehistoric Ireland.

shells polished and made like beads. Strings and belts of wampum were made and highly prized. Some of these wampum belts can now be seen in the museums; but most of them have disappeared since the white man came to America with his silver and gold. These belts tell the story of wars and

treaties, and the great deeds of chiefs. The white men tried to make wampum quickly, and to get the Indians to use it; but they always knew the good wampum made by hand, and would never take that made by the white men.

Our paper money is valuable only because our government promises to pay gold for it, if we ask for gold. Paper money is light to carry, and as it changes hands so often it is more convenient to carry

Bronze Coins in the Shape of Tunny Fish

than gold or silver. The precious metals, gold and silver, are now the money of all civilized countries, and their value remains about the same.

To love money for itself and not for the good it can do, to hoard it as a miser hoards his gold, to care for money more than for man, to measure a man by the money he has and not by his character, is to make a curse of money and not a blessing. But to learn the value and the use of money, to engage in business, to deal with others fairly and honestly, and to use money for the advancement of the world, this is to make money a help and friend, not a master. Commerce is the great band that holds nations and people together and is one of the greatest helps to progress.

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CHAPTER XXII

RELIGION OF PRIMITIVE PEOPLE

The earliest man lived in the world much as a child would live in a forest, with no path for his feet, and no light to direct him. He saw that there was something that was not himself, over which he had no power. The day, the night, the storm, the winds, the forests, the earthquake, the fire, the wild animals, all were outside his control. Because he did not know what they were, he feared them. Ignorance is always the parent of fear, as knowledge is the parent of power.

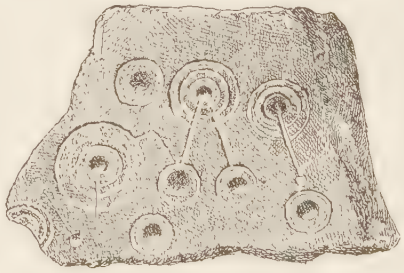
An Altar of the Stone Age in Spain

There is something in every man, no matter how ignorant he is, that makes him ask what he is, who made him, whence he came, and whither he is going. He wants to know what life is, what nature is, and what his place is on the earth, and what will become of him after death. All these questions belong to what we call religion.

As we study the religion of primitive people we find that it began in fear. Ignorant as they were of the powers of nature, they thought the thunder and lightning were the signs of anger in a god. Sickness and death came as punishment, so the god must be bought off by presents, or offerings. Life was hard, and the religion was one of fear and dread and sacrifice.

An Elfstone on which offerings to the elves were made

Many barbarous tribes have what we call a fetish religion. They make little images or fetishes of the gods they wish to please, and they carry these images with them on the hunt. If they are successful they praise the images, and sacrifice part of the animal to them. If the hunting is poor, they punish the image and throw it away.



Carvings from a Tomb of the Stone Age
These had a religious meaning

The Indian tribes believe in what we call totem worship. They think that every family or every tribe came from some animal. One tribe descended from the bear, another from the tortoise, or the snake, or the reindeer. It is unlawful

for them to injure the animal that is their "totem." They pray to it, and believe it will help them in hunting and in war. They have strange dances or religious ceremonies; they chant and cry in honor of their ancestral totem. Both fetish worshipers and totem worshipers often cut their own bodies and torture themselves in honor of their fetish or totem.

Such religions seem cruel and strange to us because they are based on fear of angry gods. There

Fetishes used by Tribes in Africa

are other religions that are not so cruel. The fire worshipers offer prayers and sacrifices to the sun, as the giver of all life and light. This is not strange. The sun is so beautiful; its coming drives away darkness, and gives color to the world, and under its rays all things grow and thrive, so men would naturally bless this kind power. We know that the earth would have no life on it if the sun did not send its golden rays to warm and nourish it.

The people of Egypt, although they believed in some gods who were spirits, yet had many strange

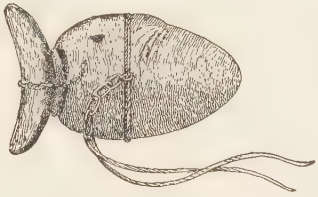
beliefs. They worshiped animals. The cat and bull were sacred animals, and any one who mocked them or injured them was put to death. There are many, many religions all having fear of some outside power as the main thought. Believing that this cruel power wishes to harm them, and will do so if not appeased, the people do everything they think will make this power less angry. Such religions, perhaps, are better than none, but they keep the people in fear, and fear is deadening.

A Totem Pole

The religion of the Greeks was a religion of beauty and love. The country where the Greeks lived was so beautiful that nature seemed to smile upon it. So, although they believed in many gods, they were kind and pleasant. There were great gods of sky, earth, and sea. Then they had a god of war, of speed, of fire, and of beauty. Goddesses of love, health, grace, and wisdom were their friends. Every tree held some graceful spirit, the murmur of the stream was the song of a nymph, and so all nature was to the Greeks the living form of many gods.

But the greatest religion is the belief that all nature, as well as we ourselves, has its being in one great spirit or God. As a father and

mother guide and love their children, as they show the path of truth, honor, and love to the little ones intrusted to their care, so are we children in the hands of God, who will direct our paths aright.



Eskimo Whale Fetish of Wood

CHAPTER XXIII

THE AGE OF METALS

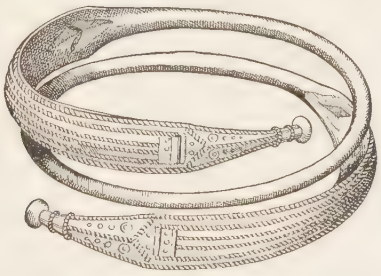
It is difficult for us, who live in the Iron Age, to remember that for thousands and thousands of years all the people on the earth lived in the Old Stone Age. We have tried to learn how they lived and what they thought. In time, but it was a very long time, people advanced to the New Stone Age. Some people learned to make polished stone axes before others, and so some people were living in the Old Stone Age at the same time that others had advanced to the New Stone Age.

When men learned to use copper, gold, and silver, and the beautiful bronze which is made of copper and tin, some people were still living in the Stone Age. Now the different countries of the earth have been visited, and the metals, including iron, have been taken everywhere, so that we are all living in the Age of Metals, although some tribes are slow in giving up the old weapons and learning to use the new.

Copper, gold, and silver are rather soft metals, and could be hammered into beautiful shapes by the instruments the primitive men had. Later men learned to use fire to soften the metals, and

then it was much easier to mold them. At this time began the great use made of metals. We read about shields of wonderful beauty, of jewelry of many forms, girdles, bracelets, necklaces, and ornaments most delicately made.

The Greeks and many other races tell wonderful stories or myths of the origin and use of fire. Vulcan, the clever smith, used volcanoes for his



Gold Bracelet made in Sweden in the third century

forges, and made thunderbolts, shields, arrows, and girdles at his fires. Men have always feared the power of fire, and regarded it as almost a living creature. Fire is man's great friend, however, and with its help he has been able to conquer many difficulties, and has made life more comfortable.

Iron is not so beautiful as gold, silver, or bronze; but it is much more useful and more valuable to man. Gold and silver, being rare, difficult to get, and of great value compared to their weight, will probably always be called the precious metals and be used as money. Gold is our standard of value.

When we say an article is worth so much, we mean so much gold.

Iron was known one thousand years before Christ, but it has been of great service only since the coal fields were found. For thousands of years the masses of coal have been waiting, lying near the iron in the earth's bosom, until some one should discover that it was a stone that would burn. Coal makes a more intense, steady, and lasting heat than wood, and since this fact has been known, iron has changed the business and the commerce of the world.

The stones which have fallen upon the earth from the sky, the meteors, have iron in them, and once people supposed that iron came from the stars. Since so much iron has been found in the earth, we know that it is a part of the earth's substance. There was much mystery in the stories told about the early use of iron. The famous swords of Siegfried and of King Arthur were things of mystery. No one knew whence came Excalibur, the famous sword of the great and noble Arthur. It was found projecting from a rock: a very interesting incident and full of meaning that iron came out of the stone — the Iron Age following the Age of Stone.

The Iron Age had driven away all witches and fairies. Where iron is no charm can work. The farmer hangs up the horseshoe to keep all fairy folk away from his barns. However, greater than

any giant of old is the power of the giant engine, made of iron and moved by the power of fire. No magic is more wonderful than the girdling of this heavy earth with rails, along which trains of enormous weight can be moved a mile a minute.

Shield Boss of Iron inlaid with Bronze
Fifth century Scandinavian

We live in the Iron Age, but not all poetry or all fairy stories are gone. The fairy that talks to us over miles of space, by whose power we hear the voices of distant friends; the fairy who travels

on the wings of the lightning, and carries our messages with the speed of thought; the fairy who measures the waves of light and of sound; the fairy who brings the beautiful wares of other countries over the broad seas for our comfort and delight; the fairy who transports us from lands of snows to gardens of roses while we sleep — all these are as wonderful as those who stood about the cradle of the Sleeping Beauty.

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